THE

SOUTHERN AGRICULTURIST.

MAY, 1834.

PART I.

ORIGINAL COMMUNICATIONS.

ART. XXIV.—*On the use of Scoops for removing Water out of Rice Fields; by* L.

Mr. Editor,—I am a rice-planter, and it is my misfortune to be engaged in the cultivation of that staple, upon what is called inland swamp.

The quality of these lands is generally excellent, but they are subject to inundation from heavy falls of rain, so as frequently to prevent the planter from sowing his crop; or if he should be so fortunate as to do this, it is exposed to drowning at that critical stage of it, when the rice just makes its appearance, and before the leaf is formed.

It is very often lost in this stage of the crop by a single shower of rain which cannot run off. It is known to every man engaged in the cultivation of rice on these swamps, that since the culture of cotton, their channels and ditches are generally filled up and choaked, so as to keep back the rains which fall upon the cultivated land, until the crop is destroyed by a hot sun upon a small quantity; which for the reasons already stated, could not be drawn off in time to save the sprouting rice. The loss of the rice in this way is not the most serious part of the business. It frequently happens that the planter is without seed to

plant, and thus his hopes for the year are blasted. The injury thus stated, takes place after the crop is planted, but an inability to set the crop at all, by reason of the water on the land is, perhaps, generally more to be deplored. I have known the water thus remain on the land to be planted until the season had gone by, and have been prevented planting at all. Many means have been resorted to, to remedy the evil. Wheels and buckets are usually put in requisition, and by great labour sometimes rid the land of the water in time for planting. They are, however, frequently insufficient for the purpose. Some simple machinery which could be made in a few hours by any jobbing carpenter, appeared to be a desideratum. I send you the model of a simple contrivance, which I have used successfully for many years, and which has always enabled me to plant, or to save my crop after it was up.

I do not boast of the invention—I derive it from the *Encyclopædia Britannica*. Title "Hydrostatics." By multiplying these along the bank of a rice-field from which the water is to be thrown, a planter may in a very short time leave his field dry enough to set the crop, or to save it after it is up.

I have never failed to do so since I have used them. The quantity of water thrown by them over a dam three or four feet high, is almost incredible. The apparatus is exceedingly simple. Nothing more is necessary than three poles about ten feet long, united at the top by a piece of cow-hide, running through an augur-hole. From the top of this triangle by means of a rope, or strip of cow-hide which is better, a scoop is suspended which will throw out about four gallons of water, to which a handle is attached. It is worked by a negro, who may either stand in the water, or on a board upon the principle of an inclined plane. From thirty to forty discharges of water may be made in a minute.

The labour is very trifling. The weight is supported, as you will perceive by the triangle, and after the first impulse is given, hardly any strength is necessary to keep it going; a negro will much rather work this than use the hoe. I confidently recommend this as the best contrivance ever used for throwing water out of a field from which it cannot run by reason of the waters being higher on the outside of the dam than within the field.

It is used in my neighbourhood pretty generally, but I do not know that planters in other parishes are acquainted with it.

L.

ART. XXV.—*On the Management of Bees; by* TYRO.

"Richmond County, (Geo.) Jan 1834.

Mr. Editor,—A great many pieces have appeared in the various agricultural journals of this country on the management of bees, and I must confess none of them exactly suits my views. The apiary so often described, appears too complicated and troublesome in its fixtures; and the putting candles in barrels near the bees at night to destroy the miller, and other such plans appear to me not sufficient for the purposes proposed. For the last two years, I have pursued a plan that has been the result more of necessity than of forecast, and I am pleased with the result. I have my hives made of plank, and the ends that sit on the bench beveled down to a point.

In the winter, I have my hives placed near the dwelling, so that they can be watched in April and May, when they swarm. As soon as it is discovered that the bees are swarming, they should be settled immediately, (which is done by ringing a bell amongst them,) and hived at once. Last summer I hived two swarms of bees, and from the time the first swarm made its appearance till both were housed and at work, it did not exceed thirty minutes. When a swarm is hived, they should by no means be disturbed till night, when they should be carried gently to the place where they are to remain the summer; never put more than two hives in one place, and this should be in a clean open spot on a bench about four feet high;—under the shade of a tree where there is no grass or weeds, is a good situation. From June till October, they should be watched, and once every week, or so, the

hives examined to see if the miller has been about, by raising up the hive and scraping the edges with a knife, and then moving it to a new spot on the same bench. With a little care you will never be stung, and by this means, and in a simple manner, you may avoid the ravages of the bee-moth, and have plenty of honey.

In a short time I will give you some account of the miller and his distructive attacks on the bee, and also my method of taking honey.

Yours, &c.

TYRO.

ART. XXVI.—*Culture of the Locust, (Robinia pseud acacia) recommended on old fields; by* CHELSEA.

"Newbern, (N. C.) Dec. 24, 1833.

Dear Sir,—Permit me to suggest to "An Inquirer," who writes in the ninth number of your present volume, that instead of "strewing the old-fields with the seeds of the pine" from which he would reap but a harvest of, comparatively, worthless *tædæ*, he should abstain, and plant a number of the Locust, the *Robinia pseud acacia*. This is a much more valuable tree for timber than the old-field pine; the *Pinus tæda*, and is of a remarkably rapid growth. A few of the young trees, which will shoot from the roots of an old one when cut down, will soon stock a number of acres with trees. From a dozen, which I planted two or three years since, a great many young ones are now ready for transplanting, and were the whole of those, which were first planted, cut down, young ones enough might be obtained to set out five acres with them. When an old tree is cut down, a numerous progeny will spring from its roots, forming a thicket for some distance around it. The pine is of a tardy growth, and when it is grown of what value is it for timber? Comparatively of very little value. True, it is better than no tree. But

when we raise a tree, why not raise a good one, especially when the good one is raised with more rapidity, and is easier propagated. In point of appearance, and there is something in appearance, the locust is a prince, when compared with the pine. It is a handsome tree, with sweet scented and pretty bunches, *(racemes,)* of pendant, papilionaceous flowers. In the propagation of this tree, we consult both our taste and our interest. We thereby add to the beauty of the prospect, to the profit of our farm, and to the gratification of our senses: and above all to the glory, and safety, of our country, by growing the timber for the construction of a ship, to be commanded by a Porter, M'Donnough, Decatur, or some other chivalrous chief of the sea, from the sides of which, when proudly floating upon its native element, will point those iron instruments of terror to our foes, and protection to our friends. And may it be known to all whom it may concern, that Americans, although disposed to be as peaceable as the lamb, can nevertheless, when the occasion may demand it, be as terrible as the lion. That they are brave in the defence of their rights, and magnanimous in respecting the rights of others.

Certainly I do not wish to slander the poor pine, or to depress it below its true standard of value; all I wish to be understood as saying is, that when compared with the locust, in either its beauty, fragrance, or timber, it must "stand off." Recollect, I mean that poor scrubby, degenerate thing, the old-field pine, and not the stately and invaluable *resinosa* of our forests.

CHELSEA.

ART. XXVII.—*On the Culture of the Tannier, "Arum maximum Ægyptiacum; by* WILLIAM LOGAN.

Dear Sir,—As I have not observed in any of the numbers of your valuable register, any notice taken of the Tannier, although a favourite vegetable with many in our

State; neither have I seen any mention made of it in the *American Farmer*, I take the liberty of presenting you with the following historical sketch of the plant, and the method of cultivation, which I have found most successful; hoping it may prove acceptable to some of your readers.

The Tannier is a delicate and excellent substitute for the potato, possessing some advantages over the sweet and Irish. It can be eaten with impunity by those who dare not touch potatoes, on account of their flatulent properties; they will keep better also, and are good throughout the summer. This plant was known and valued by the ancients, who used both the leaves and roots. There is little doubt of its having been introduced into the West-Indies, at their early settlement by the Portuguese and Spaniards, and into South-Carolina from Jamaica.

It was classed by the early botanists among the Arum's, as will appear by a reference to Linnæus and Miller; but the moderns, (as I am informed) place it among the "Caladium's." Sloan, in his History of Jamaica, mentions it as "*Arum Maximum Ægyptiacum*," and says, it was brought into Portugal from Africa, where it grows wild—that the slaves love it very much—that the hoppopotamus lives on its roots, in Egypt—and the people feed on it as we do on turnips. Tayas or Eddos, are eaten in Jamaica, and cause a heat in the throat, called "scratching of the throat," and therefore, only eaten by negroes; Sloan gives a very interesting account of this plant.

At the early settlement of this State, many negroes were brought into it from Jamaica, and no doubt, by them it was introduced. The name Tannier is derived from Tayas, (for in the course of my researches on the subject, I can find the word Tannier only in Dr. Willich's Domestic Encyclopædia, and Mr. Webster's new dictionary;) the former under the word "Eddoes," says, "another variety 'of the Tannier, both these resemble each other, except 'that Eddoes are smaller, more acid, and require longer 'boiling than Tanniers—they are planted in South-Carolina"—and goes on to give some account of the mode of culture, &c.

I would beg leave to refer the reader, for his amusement, to 1st vol. Sloan's Jamaica, p. 166, and 2d vol. p. 367—also Willich's Domestic Encyclopædia, (read Eddoes)—

Rees' Cyclopædia, (title "Arum.") Webster must have got the word "Tannier" from Willich. See also Curtis' Botanical Magazine, vol. 21, No. 832, read "Calla Æthe-opica," a coloured representation of leaf and blossom, from the production of an English hot-house. It is a perfect dwarf, compared to the production of our fields, which are magnificent and beautiful, the leaves often measuring three feet in length and two feet in width, of a perfect green colour and velvet softness, and a leaf stalk three feet long and an inch in thickness.

Catesby, in his 2d vol. p. 45, gives also a coloured representation, in miniature, and says, "A little before I 'left Carolina, (100 years ago) there was introduced a 'new kind, wholly without that bad quality (scratching 'the throat) and requiring no more than common time to 'boil; and may be eaten raw without offending the throat; 'this was a welcome improvement among the negroes, and 'was esteemed a blessing, they being delighted with all 'their African food, particularly this, which a great part 'of Africa subsists on."

I will now give you my *method of cultivation.* Time of planting from the middle of March to the 1st of May—soil rich and loose—neither too high and dry, or too low and wet. Where old hog-pens have been, answer well; at all events the ground should be well manured to ensure a good crop; after the ground has been well dug up and levelled, make up hills three feet apart every way, or four feet if the ground is very rich, the hills not to be as large or as high as potato hills. If you have no small Tanniers, take the larger ones, slice off the top or crown part about an inch thick, and quarter the remainder lengthwise, making five pieces from each; plant one small Tannier, or one of the cut pieces, (cut-side down,) in the middle of each hill, about five inches deep—when up, and two leaves unfolded, haul up the earth to them and hoe the grass between the hills—three times hauling up will be sufficient, as the leaves soon prevent the further use of the hoe—nothing more will be required until harvest.

As soon in October or November, as the leaves indicate a smart frost, cut them off about a foot from the hill, and dig up the roots carefully, expose them to the sun and air, all day, at night pile them up and cover them lightly, with the leaves, or put them into the barn, first shaking off

as much of the dirt as you can—in a few days you will find the stems of the leaves soft and rotting—you must then pair them off close to the root—trim off the fibrous roots—put them in your potato house, or other close place—separating the larger for use, and the smaller for the next year's planting; no vegetable is more easily cultivated, nor keeps better throughout the year.

The Tannier should be always pealed before boiling, and the large roots cut into two or three parts, and three hours boiling will be sufficient.

Yours, with regard,

WILLIAM LOGAN.

ART. XXVII.—*On the Culture of Cotton; by* N.

"South-Carolina, March 21, 1833.

Dear Sir,—The intention of this piece is to show the planters who are prejudiced against late planting of cotton, what has been done by late planting. I will endeavour, as far as my memory serves me, to give you my mode of culture for publication, if you think the piece below worth a place in your excellent work. I have never yet been able to manure more than one-third of my cotton crop. My land is high and sandy, and is so situated that water cannot do it as much injury as it does the most of land in our lower country. I never care to list before the middle of March for cotton, and I have commenced as late as the 12th of April. I finish planting my corn and potatoes always by the 1st of April. I then commence to list and bank, manure and plant my cotton. After my land is listed, I plough it, and then I put the manure on one task, and I get two tasks banked to the hand. I always get done planting by the last of April; and by planting so late I generally save one working. I have never used any other manure yet, except the compost, until this year. I shall use mud thrown in the cow-pen with sedge and trash,

and with the mud that I shall take from the creek the next month, I am, in hopes, that I will be able to manure the greater part of my cotton. I put fifty-five holes to the task-row, and leave two stalks in the hill, which gives me about 110 stalks to the task-row. I then commence hoeing my cotton about the 5th or 6th of May, the two first workings I haul up, and thin out half of the cotton that is in the hills. I then commence the third working by hoeing again: the fourth working I haul up, and then hill for the last time. If my cotton is well grown, the fourth working brings it to the first week in July. If I find that I cannot get done hauling up and thinning out my crop by that time, I put a few hands to thin out. There has been so much said on the subject of cotton, that it is hardly worth a man's while to write on the subject. I will at some other time try and say something about corn and peas. I have averaged 117lbs. of net cotton to the acre, for the last three years back.

I think if every planter would throw in his mite, that you would always have pieces enough for your excellent work without borrowing from the agriculturist of the North. Wishing you every success in your work,

I remain yours, with respect, N.

Art. XXIX.—*On the Culture of Corn: by* A Corn Planter.

"August 8, 1833.

Dear Sir,—On the subject of planting corn, there has been a great deal said, and a great deal learned within the last six or seven years, and there is a great deal to be learnt yet.

On the subject of attending corn with the plough, I am astonished that there is not more written than there is, for every one that uses the plough, knows that it has four

times the advantage of the hoe, for in the first place a boy that would be a half hand in the cotton-field, can attend twenty acres of corn with a plough and a horse. I wish to be understood in this piece, that the hoe is not to go among the corn after it is planted, for I can assure you, that their is no use for it. Planters are under a mistaken notion, as it respects corn wanting a great deal of earth, I know by experience, that it requires no more than the yankee plough will put to it in high land. I am astonished that the planters on the island do not make more use of the plough then they do.

Now, Sir, in the first place, to plant a crop of corn with the plough, the land must be well broken up in February, and the deeper you turn it up the better. If it is well turned up then, you have a field in good order to plant your corn, and every planter knows that good work the first part of the year will make good work all the year. I think the month of March is the best time to plant corn. If you plant corn in March, you can lay it by the first week in June, and then your horses get done before the weather is very hot. Now, Sir, if you have turned up your land in February, you may plant in March, as soon as you please. Track your land off, four feet each way with the plough, or as far as you think proper. As soon then as the corn is up and out of the way of the birds, put the plough in and break up between the hills of the corn, which it ought to do in eight or ten days: by that time the corn will want ploughing the other way—let the boy cross the other way—two ploughings each way will make any crop of corn that ever was planted in high land. You then have your field in fine order for peas, and you need not work them.

Now, Mr. Editor, if you or any other planter can attend a crop of corn and peas easier than the above plan, I shall be very happy to hear from you. If this can be of any service, you are at liberty to make what use you please of it.

I remain yours, with respect,

A CORN PLANTER.

ART. XXX.—*Rule for ascertaining the quantity of shelled Corn, in a house of any given dimensions; by* WILLIAM M. MURRAY.

Read before the St. John's Colleton Agricultural Society, and communicated by them for publication in the Southern Agriculturist.

"December 23, 1833.

In the last number of the *Farmers' Register*, page 398, a contributor under the signature of "H." proposes "a short and easy rule for ascertaining the number of barrels of shelled corn in any house or crib filled with corn in the ear." This rule is founded upon arithmetical principles, and is, therefore, correct; but in order to render those principles readily applicable among us, where all measurements of corn or other grain are made by the bushel, not by the barrel, I would suggest the following substitute: remarking at the same time that it is nothing more than the same rule slightly modified.

Rule.—Having previously levelled the corn in the house, so that it will be of equal depth throughout; ascertain the length, breadth, and depth of the bulk; multiply these dimensions together and their product by 4; then cut off one figure from the right hand of this last product. This will give so many bushels and a decimal of a bushel of shelled corn. If it be required to find the quantity in ear-corn, substitute 8 for 4, and cut off one figure as before.

Example.—In a bulk of corn in the ear, measuring 12 feet long, 11 feet broad and 6 feet deep, there will be 316 bushels and 8 tenths of a bushel of shelled corn; or 633 bushels and 6 tenths of a bushel of ear-corn.

12	12
11	11
132	132
6	6
792	792
4	8
316,8	633,6

The writer in the Register satisfactorily demonstrates the correctness of his rule; but, perhaps, the following illustration might be acceptable.

In a cubic or solid foot, there are 1728 cubic inches; in a bushel $2150\frac{2}{5}$ cubic inches. Suppose the solid content of a bulk of ear-corn to be 792 cubic feet as in the above example; it is plain if we multiply this sum by 1728, we reduce it to cubic inches; divide this product by 2150 (rejecting the two-fifths as unimportant) and we evidently have the number of bushels of ear-corn in the bulk, *i. e.* about $636\frac{1}{2}$ bushels, or about three bushels more than was obtained by the operation of the rule. But conceive 1728 and 2150 to constitute together a vulgar fraction thus— $\frac{1728}{2150}$; in order to arrive at the true number of bushels, we have multiplied by the numerator 1728, and divided by the denominator 2150. Now the vulgar fraction $\frac{8}{10}$ is a very near approximation to the fraction $\frac{1728}{2150}$; therefore to multiply by 8 and divide by 10, would produce very nearly the same result; this we have in effect done by multiplying by the decimal, 8. The decimal 4, is used when the object is to find the quantity in shelled corn, because that decimal is the half of the decimal 8, and it requires two bushels of ear-corn to make one of shelled corn.

It would be proper to remark, that in using those rules, there onght to be a half bushel added for every hundred found, for about that amount of error results from the substitution of the decimals.

WILLIAM M. MURRAY.

Art. XXXI.—*Account of the modes adopted by Sampson and Cæsar for the cure of bites of Rattle Snakes.*

[We received the following letter from Dr. Mease sometime since, but could not then obtain the information; we have lately been put in possession of an old Almanac, which contains it in part, and which we now give below.]—*Ed. So. Agr.*

"Philadelphia, November 20, 1830.

From my earliest youth, I have been familiar with the account of a negro in South-Carolina, having been set free by the Colonial Legislature of that State, as a reward for his discovery of a remedy for a cure of a bite of the rattle snake; but in Carey's American Museum, vol. v. p. 435; the prescriptions of two negroes are given for this object, and one of them adds a remedy for "poison" generally, without specifying whether it be animal, vegetable, or mineral. Both these men are reported to have experienced the generosity of the Legislature, by being made free, and by a pecuniary compensation. If such events ever took place, it is reasonable to suppose, that a record was made on the occasion in the minutes of the Legislature, and of the grounds upon which their liberality was exercised. Unfortunately no dates are given in the statements in the Museum, but I should suppose that not much trouble would attend the ascertaining the facts in relation to the subject, and as it is not uninteresting, I take the liberty to suggest the setting on foot an inquiry respecting it. A reference to the books of the Treasurer, might probably lead to the discovery of the year when the records, if any, were bestowed, and to all the facts connected therewith. These, when ascertained, would form the materials for a useful paper in your work.

I am, very respectfully,

JAMES MEASE.

"The cure for the bite of a rattle snake, as discovered by Sampson, a negro: for which discovery, the province of South-Carolina purchased his freedom, and allowed him an annuity.

Take Heart Snake-root, both root and leaves, two handfuls, Polypody leaves, one handful, bruise them in a mortar, press out a spoonful of the juice, and give as soon as pos-

sible after the bite; then scarify the wound, and take the root of the herb Avena, bruise it, pour a little rum over it, and apply to the part, over which is to be put the Heart Snake-root and Polypody, which remains after the juice is squezed out. These medicines, and applications must be repeated, according to the violence of the symptoms, so as in some dangerous cases it must be given to the quantity of eight spoonsful in an hour, and the wound dressed two or three times in a day.

The above herbs may also be bruised and beat up into a paste with clay, and when necessary, may be scraped down to the quantity of half a common spoonful and given amongst a little rum and water, and repeated as the doses of the juice above mentioned. A little of this paste may be wet with rum, and rubbed over the wound.

N. B. He always used this method when he could not find the green herb. Sometimes the cure is entirely performed by the patient's chewing the Heart Snake-root, and swallowing the juice, and applying some of the same herb bruised, to the wound. When the part is greatly inflamed and swollen, all the herbs in the following list, are taken to the quantity of some spoonfuls of each, and boiled into a strong decoction, with which it is to be fomented several times a-day.

The herbs presented last by Sampson, are:—1. *Asarum cyclimini folia*, or Heart Snake-root of this province. 2. *Polypodium vulgare*, or common Polypody. 3. *Caryophyllata Virginiana radice inodora*, or *Virginia avens*, called here Five Fingers. 4. *Loachitis aspera*, or Rough spicewood. 5. *Hypnum julaccum*, or small erect Clubmoss. 6. *Gnaphalium humile*,* or Creeping goldlocks.

Sampson frequently went about with rattle-snakes in calabashes, and would handle them, put them into his pockets or bosom, and sometimes their heads into his mouth without being bitten. In proof of the efficacy of his medicine, he several times suffered himself to be bitten by the most venemous snakes, and once let his wounds come so near mortification, that it was doubted whether he could recover—yet he cured himself with them; he disarmed any snake of its venom with some one of the herbs.

* We have given the above exactly as published in the Almanac; the English names are correct and well known among us. The botanical names, if ever used, have become obsolete.

It is said chewing the heart Snake-Root, and spitting the juice upon a snake will instantly kill it."—*From an old Almanac, published in* 1780, *by John Tobler.*

The negro Cæsar's cure for poison, for discovering which the Assembly of South-Carolina, purchased his freedom, and gave him an annuity of one hundred pounds.

1782.—*Cæsar's cure for the bite of a rattle snake.*—Take of the roots of Plantain or Hoarhound, (in summer roots and branches together) a sufficient quantity, bruise them in a mortar and squeeze out the juice; of which give as soon as possible, one large spoonful; if the patient is swollen you must force it down his throat; this generally will cure, but if he finds no relief, in an hour afterwards give another spoonful, which never has failed. If the roots are dried, they must be moistened with a little water. To the wound may be applied a leaf of good tobacco moistened with rum.

ART. XXXII.—*Query addressed to the Hon. Whitemarsh B. Seabrook; by* S.

"April 10, 1834.

Dear Sir,—It is with much pleasure I find you once more occupying the space you so ably filled sometime since in the columns of the *Southern Agriculturist*, for although the two pieces which have recently appeared in this journal, were addressed to a friend, yet he has done the community the service to furnish them for publication. I hope this will not be the last that we shall see from your pen, but on the contrary, frequently have the benefit of your exprience, and your opinions on the various subjects, which are constantly arising in the pursuits of those who till the soil.

The planters of the South are peculiarly situated.—They are lords of the soil, but seldom personally engag-

ed in cultivating it. Their peculiar business is to direct the operations of others. They have not only to direct the labour of their slaves, but they have to exercise the higher functions, of governing them, and are in themselves both lawgivers and judges. They possess power, limited but in a few respects by the laws of the land; but strictly so by public opinion, which protects the slave from oppression, more effectually than penal legislation could do. Every planter is held responsible not only for the condition of those whom Providence have entrusted to his care, but also, in some measure for their conduct when off of their respective plantations. Such being the case, all planters, especially those who are but just entering on the duties appertaining to this vocation, must feel an interest in discovering the best modes of managing the slaves on their plantations. I know of no better plan than a free discussion through the medium of this journal, and as you have already thrown out some excellent hints, especially in your last, I beg the favour of you, to give us your ideas and opinions in full on this most important and interesting subject. If your convenience will permit, I beg you will commence with the police regulation on plantations, and that which should be adopted in neighbourhoods. This would form an interesting branch of the subject, but there would still remain another, as important, and that is, the best mode of managing our slaves, so that a reasonable profit may be insured, whilst at the same time, a due attention is paid to their comforts.

Although this letter is addressed to you, yet I shall be most happy to have the opinions and experience of others.

I remain, yours, with esteem.

S.

PART II.

SELECTIONS.

ART. XXX.—*Address of the President, delivered before the New-York State Agricultural Society at the annual meeting, at Albany, February* 12, 1834.

We have associated, gentlemen, to increase the pleasures and profits of rural labour—to enlarge the sphere of useful knowledge—and, by concentrating our energies, to give to them greater effect in advancing the public good. In no country does the agricultural bear so great a proportion to the whole population as in this. In England one-third of the inhabitants only are employed in husbandry; in France two-thirds; in Italy a little more than three-fourths*—while in the United States the agricultural portion probably exceeds five-sixths. And in no country does the agricultural population exercise such a controling political power, contribute so much to the wealth, or tend so strongly to give an impress to the character of a nation, as in the United States. Hence it may be truly said of us, that our agriculture is our nursing mother, which nurtures, and gives growth, and wealth, and character to our country. It may be regarded as the great wheel which moves all the machinery of society, and that whatever gives to this a new impulse or energy, communicates a corresponding impetus to the thousand minor wheels of interest which it propels and regulates. Knowing no party, and confined to no sect, its benefits and its blessings, like the dews of heaven, fall upon all. Identified then, as agriculture is, with the interests of every department in society, it becomes *our* profession, in particular, to endeavour to enlighten its labours, to remedy its defects, and to accelerate its improvement.

Of the multitude of objects which present themselves as worthy of our consideration, I can only embrace a few of the most prominent ones in the subject matter of this address. I shall particularly invite your attention to

The economy and application of manures;

The improvement of farm implements and machines;

* Babbage on the Economy of Machinery.

The advantages of draining;

The defects which exist in the present mode of managing our hop and barley crops;

The division of labour;

The introduction of new articles of culture; and

To some illustration of the comparative profits of good and bad husbandry.

Manures.—If we consider that all animal and vegetable substances are susceptible of being converted into manure, or food for farm crops, and reflect upon the great quantity of these which are wasted upon a farm; and if we add to these considerations the fact, now well established by chemical experiment, that yard dung loses a large portion of its fertilizing properties, in the gases which escape, where fermentation is suffered to exhaust its powers upon it in a mass, we may be able to appreciate, in some measure, the great defects which exist in our general management of this all important material. Manures are a principal source of fertility. They are to our crops what hay and forage are to our cattle—the food which is to nourish and perfect their growth. Continual cropping, without manure, as certainly exhausts land of its fertility, as constant draining from a cistern that is never replenished exhausts the water which it contains. The practice of some, who, disregarding one of the soundest rules of farming, continue to crop without manuring, till the soil will no longer yield a return to pay for the labour, is upon a par with that of the man who undertook to teach his horse to live without food: just as the experiment was about to succeed, the horse died. A considerable portion of the lands in Virginia and Maryland which were originally fertile, have in this way, been injudiciously exhausted, and thrown into commons as not worth enclosing. I lately received a letter from a young gentleman in the former State, soliciting my advice as to the means best adapted to restore fertility to two worn-out farms which had recently come into his possession, and which, he stated, would no longer produce clover. It is much easier to prevent sterility than to cure it, on the same principle that it is easier to *keep* a cow in flesh when she is so, than to *restore* her to flesh after she has become wretchedly lean. In some soils, to which nature has been uncommonly bountiful in imparting the means of fertility, as in many of our river alluvians, the deterioration is slow and imperceptible; yet it nevertheless goes on even there. But in ordinary, and particularly in the lighter soils, the profits of husbandry depend, in an eminent degree, upon the faithful application of all the manure which a farm can be made to produce.

In regard to the question, in what condition are manures most economically applied, I am sensible that a difference of opinion exists, many contending, even on philosophical grounds, that it

is most wise to apply them after they have undergone fermentation. If the question was merely, whether a load of fermented or unfermented dung is of the greatest intrinsic value, in ordinary cases the former would be entitled to the preference, because it contains the greatest quantity of vegetable food. But the correct way to state the question would be this: will *five* loads of rotted manure impart greater fertility than *ten* loads that are unrotted? The numbers ought rather to be five and fifteen; for I think common dung suffers a diminution of two-thirds, instead of one-half, in volume, by a thorough process of rotting.* It will assist in determing the question, if we ascertain what the manure parts with, during fermentation, for it evidently loses much in weight as well as in bulk, and whether this lost matter would, if buried in the soil, have afforded food to the crop. For, if it possessed no fertilizing property, the sooner it is got rid of the better, and we save the expense of transporting it to the field. But, if it really consists of prepared or digested food, fitted for the organs and wants of the plant, it is truly improvident to have it wasted and lost for all useful purposes. The latter is really the case.† The matter which escapes in fermentation is vegetable matter in a gaseous form, fitted by natural process, like chyle in the animal stomach, to enter into and become a constituent in a new generation of plants. It is principally carbonic acid gas, the aliment of vegetables and the true staff of vegetable life. It has been vegetable matter, and will become vegetable matter again when brought into contact with the mouths or roots of plants. Without resorting to chemical proofs or authorities to prove this, I will suggest a mode by which the matter can be satisfactorily settled. Let any farmer, in the spring, before yard-manure ferments, put twenty-five loads in a pile to rot, and take another twenty-five loads to the field where he intends to plant his corn, spread it upon one acre, plough it well under, harrow the ground, and plant his seed. Let him plant another acre of corn along side this *without manure*. As soon as the corn is harvested, carry on and spread the twenty-five loads of prepared or rotted manure left in the yard, or what remains of it, upon the acre not manured for corn, and sow both

* During the violent fermentation which is necessary for reducing farm-yard manure to the state in which it is called *short muck*, not only a large quantity of fluid, but of gaseous matter, is lost; so much so that the dung is reduced one-half or two-thirds in weight, and the principal elastic matter disengaged is carbonic acid, with some ammonia; and both these, if retained by the moisture in the soil, as has been stated before, are capable of becoming a useful nourishment for plants.—*Davy.*

† As soon as dung begins to decompose, or rot, it throws off its volatile parts, which are the most valuable and most efficient. Dung which has fermented so as to become a mere soft cohesive mass, has generally lost from one-third to one half of its most useful constituent elements. It evidently should be applied as soon as fermentation begins, that it may exert its full action upon the plant, and lose none of its nutritive powers.—*Ibid.*

pieces to wheat. Unless my observation and practice have deceived me, he will find the result of the experiment to be this: the acre dressed with long manure will yield the most wheat, because the manure has been less exhausted in the process of summer rotting, and for the reason, that in cultivating the corn, it has become better incorporated with the soil—*and it will, besides, have yielded some twenty or thirty more bushels of corn, in consequence of the gases upon which the crop here fed and thrived*, but which in the yard were dissipated by the winds and lost.

Plants, like animals, require different modifications of food. In general, the plants which afford large stocks or roots, as corn, potatoes, turnips and clover, thrive best on the gases which are given off from dung in the process of fermentation—while those exclusively cultivated for their seeds, as wheat, barley, &c. are often prejudiced by these volatile parts, which cause a rank growth of straw without improving the seed. Hence the first mentioned crops may be fed on long manure without lessening its value for the second class, provided they immediately follow, and hence unfermented manures are most economically applied to hoed crops.

Different rules should govern in the application of fermented and unfermented manures. The latter should be buried at the bottom of the furrow with the plough, the former only superficially with the harrow. The reasons are these—unfermented dung operates mechanically while undergoing fermentation, in rendering the recumbent soil porous and pervious to heat and air, and the great agents of decomposition and nutrition, and the gaseous or volatile parts being specifically lighter than atmospheric air, *ascend*,* and supply the wants of the young roots. The next ploughing turns the residue of the dung to the surface, when it benefits on a different principle; for fermented manures consist of ponderable substances, which have a tendency only to *descend*.

Manures possess a high value in all good farming districts, where the natural fertility of the soil has been impaired by culture. In most of our large towns it is bought up at one to two dollars a cord, and transported ten or twenty miles by land carriage, and much farther by water. So essential is it considered in Europe to profitable husbandry, that every material which imparts fertility is sedulously economised, and applied to the soil. Among other things, ship loads of bones are annually

* A friend made this experiment: he trenched a quarter of his garden, and deposited a layer of *dry straw*, three inches thick, one foot below the surface, as the only manure, and planted it with water-melons. The crop, he said, was the finest he ever grew. On examining the straw in autumn, he found it was completely rotted, and reduced to the condition of short muck. He was satisfied that his melons had been highly benefited by the straw while undergoing fermentation, and that had the straw rotted in the yard, the volatile portion of the manure would have been wholly lost.

brought from the continent into Great-Britain, and ground for manure. Bone dust is in such high demand in Scotch husbandry, that its price has advanced to 3*s.* 6*d.* sterling per bushel.

We possess no certain data to ascertain the saving which may be introduced into this branch of farm economy; yet if we put down the number of farms in the state at one-tenth of our population, or 200,000, and estimate that an average increase of five loads upon each farm might annually be made, it will give us a total of one million of loads, which, at the very moderate price of 25 cents, would amount to $250,000 per annum.

Farm implements. – We must all have noticed the great improvements which a few years have made in the mechanic and manufacturing arts. Scarcely a process is managed as it was twenty years ago. Scarcely an old machine but has undergone improvements, or given place to a better model. Manufacturing operations have been simplified and abridged, and human labour has been reduced to a comparative cypher, by the substitution of machinery and the power of steam. The effect has been a great reduction in the price of manufactured commodities, and an increase in their consumption. We are assured that during the twelve years which elapsed between 1818 and 1830, Sheffield wares—hardware and cutlery—experienced an average reduction in price of sixty per cent. varying upon different articles from 40 to 85 per cent.* Cotton goods, books, and various other fabrics, have undergone a reduction no less remarkable within our time. These beneficial changes have resulted in a great measure from the aid which science has either itself imparted, or which it has elicited from mechanic skill—for a useful invention often awakens latent genius, and calls forth successful competition, even in the unlearned. No sooner is an improvement in the manufacturing arts announced, than it is adopted whenever it can be rendered beneficial—such is the facility of intercourse—such the desire—the necessity—*there*, of profiting from every discovery which benefits their art. The farmer is less able and less willing to keep pace with the march of intellect. He has few opportunities of becoming acquainted with the improvements of others, except by slow degrees; and he is so liable to be taken in by the ketch-penny productions of the day, and is withal so distrustful of new experiments, that he will hardly venture to buy new implements and machines, nor to adopt new practices, however beneficial they might prove on trial. Mr. Coke tells us that his examples in farming, (and few men ever gave better,) only enlarged the circle of their influence about a mile in a year. Hence, as regards this branch of improvement, we have much to do ere we can overtake the spirit of the age, as exemplified in our sister arts.

* Babbage on the Economy of Machinery.

Many of our farm implements have undergone improvement; yet there are others which have been either but partially introduced, or are hardly known, that are calculated to abridge labour and to increase the profits of the farm. There exists a great disparity in the quality of implements. In ploughs, for instance, there is a difference which eludes superficial observation, particularly in regard to the force required to propel them, that is worth regarding. I have seen this difference, in what have been termed good ploughs, amount to nearly fifty per cent. or one-half. The perfection of our implements is intimately connected with a correct application of mechanical science, a branch of knowledge hitherto too little cultivated among us. Messrs. Many & Ward, the enterprising proprietors of an iron foundary in this city, have assured me that there are more than two hundred patterns of ploughs now in use in this State. Of this number some may be very good, but many must be comparatively bad. But what individual is able to decide upon their relative merits, or even to become acquainted with the different sorts? It would be rendering an important service to the State at large, and especially to the farming interests, if a competent board was appointed, comprising men of practical and scientific knowledge, to test thoroughly, by examination and perfectly satisfactory trial, not only the ploughs but the other implements of husbandry now in use, or which may be hereafter invented, and to publish the result of their examination, and certify their intrinsic and relative merits. Such board might meet once or twice a year, and no inventor or vender who had confidence in the goodness of his machine would fail to repair to the place of trial. This would tend to call into action mechanical science and skill, in the confidence of receiving a just reward; the public would confide in the trial and opinions of the board; good implements would be extensively introduced and bad ones would be discarded. The expense of the examination would bear no proportion to the public benefit.

Draining.—Few expenditures in husbandry are calculated to make better returns than those made in draining, a branch of labour which has had a very limited practice among us, and of which we have yet much to learn. Many of our best lands are permitted to remain in a comparative unproductive state, on account of the water which reposes on the surface or saturates the subsoil. To render these lands productive, even for arable purposes, it is only necessary, by well constructed and sufficient drains, to collect and carry off the surplus water which falls upon the surface or rises from springs below. The rationale of draining is briefly this: air and heat are essential agents in preparing the food of plants which is deposited in the soil, and they are also necessary for the healthful developement of most of the cultivated varieties. These agents are in a measure excluded from

the soil by the water. The temperature of a soil, habitually saturated with spring water from beneath the surface, seldom exceeds 55 or 60 degrees at midsummer. Hence the grains and grasses, which require a heat of 80 or 90 degrees to bring them to a high state of excellence, can never thrive in these cold situations, where they find neither the warmth nor the food suited to their habits. But drain these soils, and they become light and porous, pervious to solar and atmospheric influence, the process of vegetable decomposition is accelerated, and a high state of fertility is developed.

One of the modern improvements in draining, which tends very much to give permanency to the work, is to dig the trench with a spade adapted to the purpose, with a wedge shaped bottom, say three inches at the bottom and five inches at the upper surface of the lower cut, and to fill this part with *broken* stone. The trench is dug two feet deep before this cut is made, and the wedge shaped bottom cleaned with a scraper fitted for the purpose. By concentrating the water it acquires force, and keeps the passage open. And if broken stone is employed, not exceeding three inches in diameter, it affords no harbour for ground mice or moles, which otherwise get in and open passages to the surface, through which water and earth are apt to enter and choke up the drain. Drains of this description are very efficient and economical to keep the bed of a road dry, placed either at its sides or in the centre, having a fall to carry off the water. A cubic yard of stone will lay about 120 feet of under drain of the dimensions above given, and eight inches deep. The breaking of the stone will cost three or four shillings the cubic yard.

The acknowledged utility of irrigation, or of spreading, occasially, the waters from steams or the highways over lands, has led to a misapprehension with many of the principles of draining. Irrigation is employed to furnish water to soils, generally slopes, where it is deficient, and from whence it speedily passes off, or to cover grounds in winter to exclude severe frost. The water thus employed is nearly of the warmth of the atmosphere, and is generally charged with fertilizing properties. Draining is employed upon flat surfaces, or upon slopes abounding in springs, where there is an excess of water, and of a temperature which materially chills and deadens the soil. Irrigation supplies water where there is a deficiency—draining carries it off where there is an excess. Both are intended, by opposite modes, to produce the same result—a suitable degree of moisture for the wants of the crop.

We have illustrations in abundance of the advantages of draining; and so apparent have been its benefits, in districts where it had a fair trial, that a knowledge of the science, for a science it may be called, is considered an important branch of

agricultural knowledge. Upon one estate in Scotland, where the farmers are generally tenants, sixty-five miles of under drains have been made within a few years, at the joint expense of the landlord and tenant. The benefits of this expenditure have been—to the landlord, an additional 5*s.* per acre upon his annual rental—and to the tenants, a more than corresponding advantage in the increase of their crops. A gentleman who deservedly ranks high in this society, and who has been a poineer in this branch of improvement, has assured me, in answer to my inquiries, that he has applied under draining to twenty different fields, to the extent of more than two thousand rods, at the average cost of fifty cents per rod; and that he has been fully remunerated for the outlay in every instance, in the increased products of three years. In some cases, he adds, where the lands produced coarse grass of little value, and where tillage was out of the question, he has expended twenty dollars per acre in under draining, and now grows upon these lands Indian corn, oats, wheat and clover, luxuriantly. The value of this land has been increased from twenty to one hundred dollars per acre, or five hundred per cent. by the operation of draining. I have had some personal experience in this sort of improvement, and have made it the subject of calculation, and am induced to believe that where stone is convenient, efficient and *permanent* under drains may be made as low, if not lower, than what they cost my friend. A labourer accustomed to the work averaged ten rods per day upon my farm, for thirty days. The ground was sandy and soft. Other materials were substituted for stone, which would, had they been employed, required more labour though they had been prepared to his hands.

The benefit of under drains are not limited to lands which show water upon the surface. We may often notice at midsummer that some flat lands have a sterile and compact appearance, whose general aspect would indicate fertility. This is readily accounted for by supposing what is often known to be the fact, that the soil reposes upon a compact strata which prevents the descent of water, and which has not sufficient inclination to pass it off. This water chills the ground, retards the decompotion of vegetable food, and causes comparative infertility. This may be effectually remedied by parrallel under drains, the space between them to depend upon the compactness of the soil, a drain being supposed to collect the water nine or ten feet on each side in the most tenacious ground. It is usual where fields are thus drained to make a cross drain along the upper side, and also one along the lower side, to receive and carry off the water which the parallel drains collect from the soil.

(*To be continued.*)

Art. XXXI.—*Culture of Sugar-Cane in Louisiana.*

[From the Manual on the Cultivation of the Sugar-Cane, and the Fabrication and Refinement of Sugar. Prepared under the direction of the Hon. Secretary of the Treasury, in compliance with a Resolution of the House of Representatives of January 25th, 1830,]

(Continued from page 214.)

Free Acids and Salts in Cane Liquor.—As these exist in cane liquor in almost in appreciable proportions, and do not exert a perceptible influence upon the process of separating the Sugar, it will not be necessary to enter into a minute detail of their properties. The acids are two in number; the acetic and malic.

(a.) Acetic acid is distinguished from all other acids by its smell and flavour. Its acidity is well marked, as it reddens litmus paper powerfully, and forms neutral salts with the alkaline and earthy metallic bases. It is exceedingly volatile, rising rapidly in vapour at a moderate temperature, without undergoing any change. Its vapour is inflammable, burning with a white light. In its most concentrated form, and under a temperature of 50° F. it crystallizes. It consists of 52.95 oxygen and hydrogen, in the proportion to form water, and 47.05 carbon. The salts of acetic acid are called acetates. They are all soluable in water. The solutions being liable to a spontanious decomposition when exposed to the air. They are eminently deliquescent and are destroyed by a high temperature.

(b.) Malic acid has a very pleasant acid taste. It crystallizes with great difficulty, and in an imperfect manner, attracting moisture from the atmosphere, and is very soluble in water and alcohol. Its aqueous solution is gradually decomposed by keeping. Nitric acid converts it into oxalic acid. Most of the salts of malic acid are more or less soluble in water. The malates of soda and potash are very deliquescent.

The salts in cane liquor are the following: 1. Acetate of lime, 2. Acetate of potash, 3. Super malate of lime, 4. Sulphate of lime.

1. *Acetate of lime* crystallizes in silky fibres, is very soluble and possessed of a sharp bitter taste; its solution, when exposed to the air, undergoes a spontaneous decomposition, the lime being converted into carbonate of lime and the acetic acid set at liberty, in the solution.

2. *Acetate of potash*, when cautiously evaporated, forms irregular crystals, which are obtained with difficulty, owing to the deliquescence of the salt. Its solution, even in closely stopped phials, is spontaneously decomposed.

3. *Super malate of lime* is very soluable in water, but insoluble in alcohol. When the solutiotion is evaporated, it appears under the form of a yellowish, or brownish gum.

4. *Sulphate of lime*, as obtained from plants, is in the condition of an impalpable white powder. It requires 461 7-13 parts of cold water for its solution, and is scarcely more soluble in hot water. It is insoluble in alcohol. It contains, when dry, 20.78 per centum of water.

To give a tabular view of these constituents, we have then, in cane juice,

Water,	Green Fecula,	Acetate of lime,
Sugar,	Lignin,	Acetate of potash,
Gum,	Acetic acid,	Super malate of lime,
Vegetable mucilage,	Malic acid,	Sulphate of lime,
Albumen,		

Other principles may hereafter be detected in cane liquor; but the foregoing are all of which at present we have any evidence. It has been ascertained however, that the rind, in common with the other plants of the same natural order, contains a large proportion of silica.* Of those principles which appear to be essential to the constitution of cane liquor, the proportions in which they are present vary with the nature of the soil and climate which produces the cane, with the drought or humidity of the season, and with the maturity to which the plants have been allowed to attain. But before alluding to the relative proportions of these principles in cane juice, it is proper to glance at the probable economy of nature in their production.

The first modification which the sap undergoes, by the peculiar vessels of the cane, results in the formation of vegetable mucilage, gum and green colouring matter. With the production of these, the farther elimination of the vegetable structure goes forward. Gluten and albumen are subsequently elaborated, and these are followed by Sugar, the acids and salts; mucilage and gum are the parent substances of all the principles of cane liquor, if we except the mineral bases, which are introduced along with water through the roots. In the early stages of the plant, accordingly, we find in the cane-juice, little else than water, gum, mucilage and green colouring matter with minute traces of carbonate of lime, carbonate of potash and sulplate of lime. As the plant approaches maturity, the other principles, above mentioned appear; the quantity of water diminishes; glueten and albumen begin to exert their influence upon the gum, converting it into Sugar, at the same time giving rise to acetic acid and malic acid, which appear to decompose the carbonates of the unripe juice, and the acids accumulate, over and

* M. Avequin, (from France, and at present a resident in Louisiana,) has detected in the ashes of *bagasse*, or the Cane which has been through the mill, besides a large proportion of silica, carbonate of lime, carbonate of potash, oxide of iron.

above, in the solution so as to be indicated by their usual effects upon the tests.

When the plant has attained its full maturity for grinding, little or no colouring matter is contained in the juice; while the gum and mucilage have given place to Sugar, and the proportion of albumen over that of gluten seems to have increased: a portion of the water has also passed off by evaporation, through the leaves, leaving behind, a more or less strong saccharine solution. If the season, however, be a moist one, the conversion of gum into Sugar is impeded by the want of concentration in the sap, as well as from a deficiency of solar influence, both of which conditions are requisite to perfect this change. Or, again, if the latter end of the cane season become wet, even after the plant has attained its maturity, water is taken up by the absorbing vessels, and the solution not only becomes dilute, but a conversion of some of the saccharine matter into gum ensues, attended also by a farther production of acetic acid.

Several analytical examinations of cane liquor have been made in different countries, which give us, however, only an approximative idea of its constitution, as respects the proportions among its elements. According to the strength, or specific gravity of cane-juice, it contains, dissolved in water, which is the principal vehicle of vegetable solutions, from 10 to 23 per cent. of principles soluble in that fluid, of which 8 to 20 per cent is Sugar, while the remainder is chiefly gum, feluca and albumen. In case, however, the juice comes from very immature cane, so as not to afford above 6 or 7 per cent. of Sugar, it is presumable that the other ingredients bear a considerably higher ratio to the Sugar, than is expressed above.

Of the solubility of these different ingredients, nothing need be said, with the exceeption of green fecula and gluten, as all the other ingredients are obviously soluble in water. Green fecula may owe its solubility, in part, to the mucilage, while the gluten is probably maintained in solution by the free acids.

The art of making Sugar consists in isolating the concrete Sugar from all the substances with which it is associated in cane liquor. We shall now give an account of this art as it is practised in Louisiana, and in Georgia and East Florida; treating the subject under the five following heads: 1. Grinding of the cane, 2. Defecation of the juice, 3. Evaporation, 4. Granulation, 5. Potting.

(*To be continued.*)

ART. XXXII.—*The Cultivation of Indian Corn; by* W. P. W.

[FROM THE GENESEE FARMER.]

Messrs. Editors,—Although Indian corn is the most important crop with which we occupy our land, it is the very one which receives the poorest management. Not a season passes which does not afford me frequent opportunity for observing the inexcusably negligent manner in which farmers cultivate their corn. They (a majority of them) begin wrong, continue wrong, and as a matter of course, end wrong. In other words, they do not plough well, plant well, nor hoe well, and under such circumstances, how can it be expected that they will receive a large crop? It is too often the case that farmers entertain the idea that any person is competent to plough who is large and stout enough to hold on to the handles of a plough; hence the mistaken, yet frequent practice, of setting boys and stupid, careless men to plough a rugged field to receive a crop of corn. There is scarcely a principle in the whole routine of farming operations, more directly opposed to the interests of the farmer, than that it is not necessary to perform this operation in the best manner possible. There is another idea too common among farmers, and which is almost or quite as fatal as the former, viz: that any one who is stout enough to lift a hoe, is qualified to plant corn; and a third notion, which caps the climax of error, is, that if the ground is so managed as to keep the weeds from actually hiding the corn, it is sufficient. Such mistaken, inconsistent and delusive ideas are cherished by hundreds and thousands of our farmers. It is this system of slack management, running through their whole plan of operations, which keep so many farmers poor. *Thorough work* is the best motto for the farmer. Thus much by way of preliminary, and now for my own practice. I do not, however, enter upon a detail of my own plan of operations with the idea that it is better than all others, but simply with the honest motive that there are some who will find hints contained in it which will benefit them.

My first step towards raising a crop of corn is, to remove from my field all obstacles to the plough, by which I am enabled to make, with a certain prospect of success, my second step, viz:

Ploughing—which I perform with a good stout yoke of oxen, and a well shaped cast iron plough. The management of the plough I do not entrust to others when circumstances will allow of *my* attending to it myself—for I find that I cannot hire my ploughing done so well as I can do it myself, and in performing the operation, I spare no pains, nor time, to do it as well as it can be done. I make it a point to have every *inch* of sod inverted, and if from any circumstance this cannot be done with the plough, I immediately stop my team and do it with my hands.

Do not start at this, brother farmer! but remember that it is not *possible* for you to have your ground too well ploughed for any crop. If you cannot plough but a little in a day, plough that well, for it is quicker and easier to plough than to hoe.

Rolling.—This I do with a roller 6 feet long by 20 or 24 inches thick, made of solid white oak timber. By going over the ground with a roller as heavy as such an one necessarily must be, in the same direction as that in which it was ploughed, it is put in a fine state of preparation for the next and very important operation of

Harrowing—which I perform with a heavy four-square (as it is commonly called) harrow, containing twenty slender, sharp iron teeth, steel pointed. I make it a rule to harrow until my ground is *very* mellow, without any regard to the length of time which may be required in order to accomplish this object.

Marking out—I do with four chains, fastened with one end on a pole, three feet apart, which pole is supported and drawn by two men (one at each end) across the field in a different direction from that which was last taken with the harrow.

Planting.—Before planting my corn, I wet it with soap and then roll it in plaster. I obtain the most careful men I can find for assisting me in planting—make it my rule to put my seed on mellow earth, all lumps being kept out of the way, and none being drawn over the seed, which I cover lightly with fine earth.

First Hoeing.—As a preparation for this important operation, I enter the field with my cultivator, passing it through the corn twice in a place, both ways. This leaves the ground very mellow, and in excellent condition for hoeing. I suffer no weeds to be buried in the hill, but have them all carefully pulled out. If the earth above the plants is baked, I have it displaced, and substitute that which is mellow.

Second Hoeing.—It is common among farmers, even those who have a cultivator, and every farmer should have one, to use a plough to prepare their ground for a second hoeing. I have done so myself until the last year. I had two fields planted with corn. I prepared one of them for the second hoeing with the plough. When about to enter the other, I thought of trying the cultivator,* doubting, however, whether the experiment would be a successful one, for the corn was then two feet or more high. But, after some hesitation, I hitched my horse to my cultivator and went at it, and more complete, satisfactory success I could not have wished for. There was less corn broken down than would have been with the plough, and the sod was left entirely unbroken; the ground as mellow as a garden bed. In my second hoeing I leave the ground as level as possible, taking care

* I wish those who have never tried the cultivator for the second hoeing would do so. I have no doubt of their success.

not to make a hill about about the plants, so that their roots may be left to shoot along horizonally near the surface of the earth, and get to themselves the heat of the sun as soon and direct as possible.

Harvesting.—This I do by cutting up at the root as soon as the corn is glazed; make a bundle containing eight hills, and a stook containing eight bundles, bound very tight around the top with one band.

After planting, and before the corn comes out of the ground, I strew over the ground about half a bushel of corn to every three acres, or a bushel to six. The birds will pick up this corn, and not meddle with that which is growing. If the birds are numerous and hungry it may be necessary to sow the field a second time. The year before last I suffered very much from having the birds pull my corn; last year I tried the experiment of sowing corn over my field, and had not a single plant pulled up afterwards. It is cheaper to give the birds a bushel of corn, than to have them pull up what would produce 25 or 50 bushels, which they often do, and have done for me. I have found no scarecrow so effectual for the protection of young corn, as to feed the birds with as much as they will eat.

I plaster my corn after the first hoeing.

I came near forgetting one thing, viz: the amount of seed used. Last season I followed Judge Buel's advice, and put into each hill from six to eight kernels. At the first hoeing I sent one person ahead to pull out all the plants but the four healthiest ones in each hill. The consequence was, that throughout my field there was rarely a hill which had not its four stout stalks. I would strongly recommend this plan to others.

And now, Messrs. Editors, I have made out a long story about raising corn. Whether it is worth publishing, you may judge.

Respectfully, &c. W. P. W.

Milton, Saratoga Co. Feb. 1, 1834.

Art. XXXIII.—*Culture of Melons; by* T. S. P.

[FROM THE GENESEE FARMER.]

In the Genesee Farmer of the 18th ult. there is a communication from W. W. B., stating his want of success in the cultivation of melons. Perhaps I may be able to suggest a plan by

which he will not be liable to such a total failure in future, though I should suppose that in your latitude there was not much certainty in bringing this delicious fruit to perfection. I would recommend him to select the lightest spot of ground in his garden, and at suitable distances, say eight feet apart, dig holes about thirty inches square and about eighteen inches deep. In these holes put some well rotted manure, which must be well mixed with the *soil*, until they are nearly full. The soil should be entirely clean of grass or grass roots, and completely pulverized. A sufficient quantity of the same kind of earth should then be thrown on to raise a hill to a moderate height above the general surface of the ground. If these directions are followed, and the sub-soil be not of such a tenacious quality as to retain much moisture, I think a fair crop may be reasonably calculated upon. An additional advantage would be derived from digging the holes in autumn, and letting the earth thrown out remain until spring to be ameliorated by the frost. This is the mode pursued by some of the gardeners who supply the Richmond market with melons, and I have found it to succeed better than any other I have tried. I will, however, mention an experiment I made last year, the result of which was favourable beyond my expectations. I raised a few plants both of the water-melon and the cantaleupe in a box, which came up very early among other plants. I transplanted them into a rich, well prepared spot of ground, that had been spaded very deep, being careful to take them up with as much dirt round the roots, and with as little injury to the fibers as possible. They grew well, were not infested by bugs, being too large to be much annoyed by them—and yielded a remarkably fine crop, both as to number, size and quality. If this operation is performed well, and the young plants kept moderately watered if the weather is dry, I incline to the opinion that this will be found to be a very eligible way of raising the melon. By this means we may also have the plants in readiness to set out so as to be greatly in advance of those planted in the open ground; for the earlier they get a start the more certain will be crop. The seeds may be planted at once, and the transplanting done as soon as the danger from late frosts is over.

T. S. P.

Beaverdam, (Va.) 2 mo. 3, 1834.

Art. XXXIV.—*Salsify or Vegetable Oyster.*

[FROM THE GENESEE FARMER.]

Tragopogon porrifolius.—This plant, which is known by the several names of *Salsify*, *Vegetable Oyster*, and *Goat's Beard*,

is often confounded with that of the *Scorzonera Hispanica*, garden *Scorzonera* or viper's grass.

The salsify is a deciduous, herbacious, biennial plant, with a long, tapering, white root; parsnip shaped, with a white milky juice, and mild sweetish flavour; it has long been cultivated in gardens, for the sake of the roots, which when cooked, have much the flavour of oysters.

The leaves of this plant somewhat resemble those of the leek, being smooth, green, and pointed. The second year, the seed stalks rises three or four feet high, producing flowers of a dull purple colour, which are followed by seeds, surmounted by a crown of downy substance, somewhat resembling the common thistle.

Were the valuable properties of this plant more known, it would be more extensively cultivated in gardens, particularly in the inland parts of this country.

It is thought impossible by many, that a plant should be cultivated, which should bear any resemblance in flavour, to oysters; but all who have tasted salsify, when properly cooked, must, not only acknowledge that there is a resemblance, but that this root, is a good substitute, for the marine production.

The manner of cultivation, is precisely the same of that of parsnips; and roots which are not wanted for fall and winter use, may be allowed to stand in the ground, in the same manner, for spring use.*

They are cooked in all the different ways as oysters. When they are intended to be fried in butter, they should be first parboiled, the skin taken off and sliced; the same for stewing, or they may be mashed. They impart a fine flavour to the stuffing for fowls.

There is an annual plant, which belongs to the same class with the salsify, and which very much resembles it, both in leaf and seed, the seeds of which are sometimes through design, or mistake, sold for salsify seed. It is the *Geropagon glaber* or old-man's beard. It is not worth cultivating.

Scorzonera or *Viper's grass*, also belongs to the same class with salsify; but is a perennial plant, with a deciduous, herbacious top, which grows to about the same height as salsify; but has yellow flowers, which are followed by seeds, not unlike those of salsify. The root bears a resemblance also, but is not counted as profitable. The leaf of Scorzonera, somewhat resembles that of the plantain.

* The best time for sowing salsify in this latitude, we find to be the months of March and April.—*Ed. So. Agr.*

Art. XXXV.—*Remarks on the Effects of Different Shades on Vegetation.*

[FROM THE FARMER'S LIBRARY.]

As trees are placed either naturally or artificially around the borders of fields appropriated to tillage, it is important that the farmer should be apprized of the different effects which the shades of different trees may have on certain plants. The information on this subject is derived from the certificate of Mr. Livingston, of New-York.

I planted maize, says he, on the west side of a young wood, consisting of oaks, poplars, a few chesnuts, and a large mulberry somewhat advanced into the field. The shade made by the rising sun extended nearly across the field, and was not entirely off until about ten o'clock. I remarked, that as far as the shade of the chesnut reached, the corn was extremely injured; it was yellow and small. The conical shape of the morning shade, from particular trees, might be traced to considerable extent, in the sickly appearance of the plants. The black oaks were likewise injurious, but less so than the chesnuts: the poplars, very little so. Near the mulberry tree the corn was covered by its shade for a very long time every morning, and though not so large as that which had more sun, maintained a healthy appearance.

He further remarks, that the shade of the black oak is particularly hurtful to the growth of wheat: that of the locust is, on the contrary, beneficial to grass grounds: and that of the sugar maple does but very little injury to the growth of grain, and more to grass.

From the observations respecting the effects of the shades of the sugar maple, the mulberry, and the locust, it might be expedient to plant those trees around some fields, designed for pasture, grain, or meadow: especially the locust, which, in the essay on the management of wood land, is described to be very valuable for many mechanical purposes, which require solidity and durability. It will propagate itself too, in the most barren places, where the soil is even so light as to be blown away by the winds. By sheltering such places, and dropping its leaves on them, it causes a sward to grow over them, and grass to grow upon them. It is, however, objected by some, that it is not advisable to plant the locust on the borders of fields, on the account of their spreading too much, by scattering their leaves, unless on those which are most barren. This objection, however, it would seem, might be obviated, when the field to be enclosed by the lucost was often to be appropriated to the purposes of tillage, especially to the culture of the hoe, by which every superfluous plant may be suppressed.

It is of importance to the farmer, when making a new settlement, to ascertain, by observation, the effects of the various forests trees on vegetation, that he may be able to decide correctly respecting which are most proper to be left standing on the borders of his fields.

In some of the best cultivated parts of Europe, as well as America, the border of the field adjoining the highway, is often found ornamented with either a natural or artificial row of trees, such as are found least injurious to vegetation; and which are often, too, appropriated as important constituents of the fence.

It is believed that the shades of many other trees, that have not been mentioned in this essay, will be found to be but little injurious to many of our valuable plants.

So far as this inconvenience can be avoided, it is hoped the disposition for the destruction of our trees generally, will be less prevalent. Monsieur Michaux, in his works on the forest trees of North America, in stating the causes which induced so general a destruction of them in this country, observes: "The cost and expense of clearing our lands, compared with their value after they were cleared, and the difficulty of eradicating completely the after growth, were so great, and the forests themselves appeared so vast in proportion to the probable demand for fuel, and wood for building, and other purposes, that no man dreampt that the day would arrive when their descendants might respect the improvidence of their ancestors. Hence there seems to have been a sort of hatred, an indescribable prejudice against trees, especially around their dwellings."

The above causes, perhaps, can alone account for the fact, that in our climate, where the summer months are so hot, compared with the climate of Europe, and where the clearness of the sky seems to render shade so much more important, we find such a general warfare waged upon trees, in the vicinity of dwelling houses, and about fields, where they might have remained without any detriment to plants.

ART. XXXVI.—*On the Effects of Terrestial Radiation on the Processes of Vegetation; and some account of the Chinese method of propagating Fruit Trees; by* J. MURRAY.

[FROM THE GARDENER'S MAGAZINE.]

It has been shown that the cooling process of radiation, by which the temperature of the surface of the earth is lowered so

considerably, differs materially on the inclination of the hill compared with the bosom of the valley. Mr. Daniell, indeed, states, on one occasion, a difference amounting to 30°: that is to say, the thermometer on the inclined surface maintained a higher temperature by 30° than another placed on the horizonzal or level plane of the adjoining valley. This difference is certainly enormous; but it is proved beyond a doubt, that a slope, an incline plane, for instance, radiates less by many degrees than the surface which is altogether horizontal. Indeed, I think we may collect abundant proof of this important fact among the mountains and the valleys of Italy. On the plains of Piedmont, the vines which are suffered to attain a considerable altitude on lofty poles planted as their support, are detached from these poles towards the approach of winter, and prostrated on the earth, where they are secured from injury by the straw. This treatment protects them from the effects of the intense, though short winter, which reigns on the plains of Piedmont; for, even at Turin, the water in my room has been congealed into a solid mass of ice throughout its entire extent. The olive succeeds in Tuscany, but the almond, pomegranate, and plants of the Citrus family, flourish but imperfectly; and yet on the acclivities of the ampitheatre of the Appennines, which forms a semicircle round the magnificent city of Genoa, you find that the pomegranate, the lemon, and the orange, mature their fruit and luxuriate. Even the imperial city is indebted for her palm branches to the palms which succeed in the open air at Nice. Now, the only difference in these circumstances consists in a reduction of the loss sustained by radiation, and the attempered influence of the sea breeze, which more than counterbalance the increase of warmth imparted by the sunbeams to a more southern clime: perhaps even the excellence of Monte Somma wine may have something to do with the acclivity on which the vineyards are planted. To my vision, fruit trees planted on terraces, and rising one above the other in amphitheatrical form appears beautiful; but this has become, I suppose, unfashionable, because it happens to be a gem from the antique. Now, restlessness in search of something new, however absurd, is incessant. The ancients appear, in this respect, to have known what they were about; and I must frankly confess that, in my estimation, they acted wisely, and had the better of us, and that we are decidedly in the rear. To this cause I attribute the remarkable fertility of the land of Judea in former times Its susceptibility is sufficiently apparent, and there still remain existing vestiges of this mode of cultivating the flanks of the valleys, or the sides of the diversified hills of Palestine, to a considerable altitude. It is still, however, very questionable, whether low walls, constructed of brick, or of stone and mortar, quite vertical, would succeed so well as the surface of a calcareous or sandy soil, at

an angle, for example, of 45°. A sandy soil absorbs heat, and continues heated, because sand is an indifferent radiator, and is, moreover, a non-conductor of caloric (heat); so that vines, &c. in contact with such a surface, would be more than compensated for the temperature they would lose through the medium of radiation; which would also be attenuated from the inclination of the plane.

At St. Mary's Isle, the seat of Earl Selkirk, near Kirkcudbright, I remember to have seen a beautiful illustration of my views, in the case of pear trees pinioned to trelliswork in such an inclined surface as I have described; and I have always understood that the crops of fruit which these trees carried were remarkable both for quantity and quality: indeed, it must be apparent that, under such conditions, spring frosts can have little or no influence, because these frosts are entirely connected with the principles of radiation, and have little or nothing to do with the temperature of the atmospheric medium. If the soil is not of a sandy consistence, in that case I would employ a thin stratum of sand. I have in my little garden just such a surface, inclined and sandy, and have planted vines with an intention to train them on the surface, on a frame-work, something like cucumbers or melons in a hot-bed. The vine I am making my experiments with, is called Miller's black grape. I have already had ample proof that the healthy luxuriance of other tender plants does not suffer, and that frosts has little or no effect on such an exposure.

For the purpose of maturing the fruit, I shall throw a veil of black gauze over the vines; and this will secure me the effects of a powerful absorption of the caloric rays of the sun's beams. Though the radiation from a black surface is proportional to its absorbent capacity, it will operate during the lengthened day (and at this period of the year the night is reduced to its minimum) in the maturation of the fruit, while the sandy surface is retentive, from its non-conducting character. If bunches of grapes on vines exposed *sub dio*, or reared in the open air, be tied up in white bags, they will scarcely ripen, are small, and want flavour; but if other bunches on the same tree be confined in bags of black crape, the contrast is very striking, in the latter being fully ripe, large, and of a flavour equal to those cultivated on a foreign soil. This fact explains the principal on which I would veil my vines with sable weeds; further explanation would, therefore, be superfluous and unnecessary.

Respecting the Chinese method of propagating fruit trees, it is merely requisite to detach a strip, or narrow ribband, of bark from the branch or limb which is to be separated. The Chinese apply to this a ball of earth mingled with clay, to impart greater consistency to it, and this is covered with moss, and secured by bandages formed of some pliant material; a small pan containing

water, is suspended over it and serves to keep the ball moist. This method, as successfully pursued in this country, was first pointed out to me by Sir Lauchlan MacLean, of Sudbury. The Italians often adopt the plan; and I have seen a large orange tree, 14 feet high, loaded with growing fruit, thus separated from the aged parent stock, and exposed for sale in the market at Naples. I have witnessed the plan in full operation near the royal observatory in that city. One obvious advantage is, that no time is lost in the growth of the tree; nay, the very abstraction of the ring of bark from the branch rather expedites than otherwise the evolution of fruit. The Italians have improved on the rude plan of the Chinese, by enclosing in a tin case, the stem of the future independent tree: it is filled with earth, pressed down, and covered with moss, which is preserved moist in the way I have already described. This part of it I have improved, by suspending the tin vessel which contains the water on an adjoining branch above the ball, while a woollen thread, previously moist, forms a line of communication, and affords a constant regular supply, on the principle of the syphon, and the capillary attraction of the fibres of the thread. A lid prevents the loss by evaporation from the surface of the water confined in the vessel.

A linear incision in the bark above a bud, it has been stated, will convert that bud into a branch. Last season I tried several experiments of this kind on a fig, cutting out a narrow strip of bark, over the bud, in the form of an inverted V, and succeeded in producing branches in five out of seven instances. The want of success in these two, I suspect, arose from the imperfect separation of the lips of the bark, and the insufficient depth of the incision. I am, Sir, yours, &c.

J. MURRAY.

January 20th, 1833.

Art. XXXVII.—*Farmer's Diary; by* Ontario.

[from the genesee farmer.]

It may excite a smile, on the part of many of my brother farmers, to be told that they would experience many beneficial results from the practice of making memorandums of every day's transactions; yet I may be able to convince them that such is the fact, and that, however, unaccustomed to the use of the pen,

there is hardly one of them but what may briefly note, in the evening of each day, the business which he or his men have transacted. And practice will render it more and more easy.

Surely, it would be a satisfaction to every one to know how many days his hands have been engaged in preparing the ground for a crop, how much seed he used, at what time he ploughed, planted, sowed, or hoed, and at what time his crop was harvested, and what the product. I should also suppose there would be an advantage in knowing at what time to expect his stock to bring forth their young, that he may afford them the necessary attention.

If he employ men in his hay or harvest field, to be able to ascertain from his diary who were employed each day, or if driven from the field by rain at what hour, that when settling time shall come he may know, to an hour, how long each one has been employed.

By preserving an account how many shocks of wheat, oats, or barley, he has deposited in stacks or in the barn, or how many loads of hay he has secured, he may form some judgment how much of each he may have to sell. By keeping an account how many baskets of corn, or potatoes, he has drawn in, it is easy to estimate, by measuring the basket, how many bushels he has, and of course how his land has produced.

When he thrashes his grain, and cleans it up to know exactly how many bushels his acres have produced; and if he have put them in at different times, different quantities of seed, or have varied in the mode of preparing the ground, to know which has done the best. I say to be able to ascertain all these points, by an examination of his diary, must be attended not only with satisfaction but profit.

A farmer has a pair of oxen which he concludes to fat. He notes their value at sixty dollars—begins to feed—an account is kept of what they consume. He sells them at sixty-five dollars, and ascertains in a few moments whether he is paid for fatting.

I can say from experience, that it does not occupy more than ten minutes to make an entry of the day's business, and that all the benefits I have enumerated, and many more may be realized.

It is the practice of many farmers to *guess* that they have so many bushels of wheat, corn, oats or potatoes per acre, and this *guessing* is oftentimes very wide from the truth. Or if they take the trouble to measure, they forget all about before a year comes round.

Without preserving such an account, how is it possible for the farmer to ascertain whether he gets paid for his labour; or if he have made experiments to keep an account of the results for his future guidance?

And when noting the business of the day, how easy to add, in a few words, the state of the weather, thus: Snow with high wind, N. W.

This practice would enable the farmer, when enjoying his fire side in the winter, to review his operations for the past year, and to discover where he might have done better, and of course he would be qualified to pursue his business to more advantage during the coming season. ONTARIO.

ART. XXXVIII.—*Stirring the earth a Relief against Drought; by* J. L.

[FROM THE MASSACHUSETTS AGRICULTURAL REPOSITORY.]

This is a trite subject, and one, which we are aware has been long since settled by intelligent cultivators in all countries. It is very familiar to gardeners, and the cause of the very superior productions of gardens over field culture may be attributed in part to the more frequent application of the hoe and spade. Yet it is true, that a very great number of farmers deny the proposition and disapprove the practice. They think it dangerous to plough and hoe, in the time of extreme drought and heat, while our own experience of twenty years has convinced us, that it is much superior as a remedy, against drought, than watering in the limited manner, in which that must always be applied. There has never been a season in our memory in which there was greater necessity for the application of *all* remedies against drought than at *present*. The drought was not only of longer duration but it took place, when plants were the least able to resist it, not having sent their roots in quest of nourishment far wide, and deep. The early foliage, also is more liable to wilt under a scorching sun or drying wind. In this extraordinary season, I had a small patch of early potatoes planted in a warm and sandy soil, purposely to procure an early crop: the soil was at least three quarters pure sand, mixed with some food for plants among the sand. The severe drought threatened a total loss of the crop. The potato stalks were feeble, drawn up, scarcely larger than goose quills, and I expected every day to see them wither; all hopes of a crop were abandoned. I thought they were the fair subject of a *desperate* experiment. On one of the hottest and driest days, I gave them a thorough ploughing,

passing the plough four times through each row; first ploughing two furrows from the hills, as near the roots as possible, without throwing out the seed potatoes, and then returning the loam, or earth, instantly back by two other furrows. No rain intervened for ten days. In three days after the potatoes changed their colour, they started afresh as if they had received the benefit of ample showers, while not a drop of rain had fallen.

The dews, which were abundant, settled upon the new turned earth, while before the ploughing, no moisture had been apparent.

The last fact though it cannot have escaped the notice of the most careless cultivator, has not been as yet explained. We can easily see, that a soil, rendered porous, would more readily and easily convey its moisture to the roots. It becomes like a sponge, and is readily permeable or rather readily permits the moisture to pass between the particles; but it is not yet understood why it attracts the moisture. Perhaps however, it may be owing to its presenting a much greater surface to the moist air of the night. The fact however, which is what *most concerns us* is settled. Perhaps some of the experiments of our distinguished countryman, Dr. Wells, a physician of London, who rendered himself distinguished by his remarks on dew, may tend to explain these facts, though it is not my purpose to examine the theory.

Every man who feels an interest in the question, can satisfy himself, at once, by stirring a small peice of earth in time of severe drought, and if he does not find it in the morning more filled with moisture than the undisturbed ground in its vicinity, let him continue a disbeliever.

But there is another mode, and it is one which I have never seen suggested, by which I apprehended the stirring of the surface, and making it light and porous, is beneficial in great droughts. It is this: light porous bodies are bad conductors of heat: perhaps because they have more air between their interstices. The facts are familiar to us. Metalic bodies acquire an intense heat, under the rays of the sun, so do stones in proportion to their density. The earth when very compact, will become exceedingly hot, but garden loam which is very porous, remains cool at noonday, two inches below the surface. I believe therefore, that moving the surface, and keeping it in a light and porous state, enables it to *resist the heat of the sun's rays*, that the air between the particles of earth communicates the heat more slowly than the particles themselves do, when in close contact.

Such is my *theory:* but I am an enemy of theories, I always distrust them, I look only to facts; and having observed that a slight covering of half an inch of sea-weed would preserve my strawberries from drought, which can only arise from its lying so

loose on the surface, I have been led to infer, that the undoubted fact, that the soil in a loose pulverized state resists drought, is owing to the same cause, to wit, the slowness with which the heat of the solar rays is communicated to the roots. But be the theory sound or unsound, I am persuaded that every farmer will find that the free use of his plough and hoe, in times of severe drought, will be of more value to him, than as much manure as that labour would purchase. I have been always convinced from my experience as a horticulturalist, that the great secret in cultivation consists in making the soil porous. In raising exotic plants, we know it to be true, and our flower pots are always supplied with soil, the most porous which we can obtain. The farmer may borrow light from an occupation which he looks upon with disdain, but which elucidates and explains the secrets of vegetation. J. L.

Art. XXXIX.—*Breeding and Rearing of Calves.*

[FROM THE FARMER AND MECHANIC.]

Various are the methods that are practised in rearing calves, and every one thinks his own way a master-piece in that art, or doubtless they would seek for some information more practicable. Many eminent authors have written on the subject, and many experiments have been tried, both in rearing and fattening for the butchers. In the latter case, to make them fat and the veal of a good colour when killed, are presumed the two greatest requisites in feeding for slaughter; and in the first, a well guided choice in the subject, that it be fitted for the country where it is intended to be reared, with the method of preserving health, and a practical knowledge of food, and its distribution at different ages; also the effect of climate on the frame, while under the various changes they undergo in coming to a maturity.

From an instinctive principle in this species of cattle, that nature has instilled, the cows always show an inclination to clean and dry the skin of their young, by licking with their tongues all the sliminess which is natural and unavoidable in their situation before birth, and when the beast has parted with her burden, she ought always to be suffered to do it, if circumstances will warrant. However, some method ought to be speedily put in

practice to get the young dry and cleaned from its state of sliminess, if the cow be weak or negligent. When they calve in the field there is nothing to obstruct their inclination; but when it takes place in the house, and the beast is tied fast, it is necessary that some person should be in the way to lay the calf before the mother upon clean straw; if the calf be suffered to cool, before the cow could come at it, the calf would be in a very disagreeable situation in a cold season. It is common, and of great service, to strew a small handful of common salt over the calf, which is often found agreeable to the cow, and urges her on to her duty. When the calf is licked dry it is much strengthened. Its mouth and roots of the tongue should be washed with a little common salt and water, to clear it of the saliva and clamminess always in the mouth of a calf newly dropped; or, if convenient, a fresh raw egg and a little common salt may be given to the young animal to swallow, which will soon cause an appetite, and then something more substantial may be given. When the calf is dry, it would be advisable, whether in winter or summer, in the house or in the field, to put it in a stall or fold, well littered with straw, or some other dry materials, that might keep it comfortable until it gained strength enough to travel, which would enliven circulation and digestion.

It is customary with many people (and never known to be attended with ill consequences) to boil a pint of good household beer, or ale, and sweeten it well with soft sugar, to give the calf when taken from before the cow; by others it is suffered to suck immediately after it is dry, and by many not suffered to suck the cow at all.

Were any of the above customs to be insisted on as better than the rest, it would be offending against some person's favourite practice, without being of any material service to others—however, there are some general rules that may tend to be particularly useful.

The calf might, with propriety, be suffered to rest an hour after its birth, before any milk be given to it; the beer, previously mentioned, may be given any time after birth, and, if given at all, it should have nothing for an hour after it. It would be advisable to take a quantity of milk from the cow, before the calf be put to suck, it being thought much better not to give the first of the milk, but rather of the last. Too much should not be given at one time, when the animal is young. Many calves die or take disorders when young, owing to a want of proper knowledge and care in their keepers. They are often abridged of exercise, and perhaps only allowed to feed twice in one day, and then receive as much, each time, as ever their craving appetite can take; when, in all probability, by giving one-half the quantity, at four times in the day, with a dry place to rest on,

and room for moderate exercise, its health might be preserved; while, on the contrary, death or disorder is often the event.

The propriety of this mode will, in all probability, be called in question, and the inconveniency urged of giving them the milk warm from the cow, the common custom being to milk the cows only twice in a day, which has led people to judge that it must be right to feed the calves twice in a day also: but it would be found of material advantage to milk the cows and feed the calves three times in a day, rather than twice, for the space of two or three months after the common season of calving, which is in spring or summer. In winter it is not so requisite, the milk neither being so rich nor in such plenty. In many places, it is practised from absolute necessity, the cows being unable to bear their milk from one end of the day to the other. It might also be an entire preventative from milk cows being attacked with the sore udder. If it be found inconvenient to milk three times in a day, or the old custom of twice be so rooted that it cannot be changed, milk may be warmed and given to the calf, with an equally good effect, taking great care that it be given no warmer than the blood of the animal.

This method may be practised, for a short space of time, either on those intended for rearing, or fattening for the butcher; after digestion and circulation have been established in the system, by care and attention, the proprietor will probably have destined the animal for one or the other. Those intended for veal ought to be fed with greater plenty than those that are meant for stock.

In Ireland, and some parts of Scotland, the calves are taken to market, for veal, at the age of five or six days, or sooner. This may be owing to their being able to make more money from the milk and butter than by feeding them for slaughter, or from the custom of the country: yet, on the other hand, there are many land-holders, who purchase young calves of their neighbours, purposely to fatten for the butcher, and acquire considerable profits by the practice; but those things can only be accounted for, from certain prejudices or customs, on the one hand, and knowledge gained by experience, on the other.

In that part of the county of Cumberland, called Abbey Holme, the land-holders are famous for fattening calves for veal; not only for size and fatness, but a peculiar mode of treatment, that renders the veal, when killed, remarkably white and well coloured, which is a great advantage in selling.

Some of the farmers there use all their milk in this way, and have always upon hand as many calves as their milk-cows will feed; they always take care to have them of different ages, and then the plan is carried on with regularity: when they begin their stock the calves are fed in the usual way, until they are two or three weeks old, when they are taken to the feeding-shed where a couple of small stakes or posts, for every calf, are driven

into the ground, about ten or twelve inches from each other; the calf is brought up to the posts, its head put through them, with a strap or cord made fast round its neck and from the strap or cord there is a ring on each side, which also encircles the post. This is meant to confine the animal so that it cannot lick itself, (which, if suffered to do, is found pernicious to its health,) but it has liberty enough to lie down and rise at pleasure; as soon as the animal is perfectly reconciled to its situation, they begin to feed it better than usual: they are convinced that the first part of the milk, taken from the cows at any time, is much less nutritive and rich than the latter, and so divide it, according to the different ages of the calf or calves, always making it a rule to give the oldest the richest part of it. Their shed is kept warm, or cool, as the necessity of the seasons demand. It is always perfectly dry, with a plentiful supply of good dry litter; and if any of them fail to take their meals regularly, they are sent to the butcher immediately, and replaced by the next in turn; if the milk improve or lessen, they can always regulate the stock by adding or diminishing their numbers.

Farmers who manufacture their milk into butter and cheese, sell their calves to butchers, or others, at an early age; and the calf-keepers can always afford high prices for them as the butcher, owing to their only just beginning to become fleshy. The short time they have lived before has done no more than put them into a condition to feel fat. A well-fed calf will bring two pounds and ten shillings, or three pounds, at near three months old; and the proprietor finds, from experience, the most proper time for selling them off to advantage. It is found when they grow fat, and take to rest, they take less food than in a leaner state, which makes the expense of keeping less than may sometimes be supposed. The keepers now and then make a practice of mixing a little oat or bean meal with the new milk, which is attended with advantage, if the animal's constitution can bear the change; for it sometimes causes a looseness in the body, that soon stops the progress of fattening. Therefore a very little will serve for the experiment, and the keeper should be careful to desist when the change is found not to agree with the animal.

Some give three or four eggs every day, which may be broken against the roof of the mouth, and they suffered to swallow the shells also. The eggs should be given at a distance from any meal. If they are served only twice a day, the eggs should be served at mid-day; and if three times, they may be given in the fore part of the day. Many people recommend bleeding, but it is not known to answer any interesting purpose when feeding calves for the butcher.

Calves are subject to many disorders, when young, which may be attributed chiefly to the want of knowledge, or attention, of those to whom their care happens to be entrusted. The pro-

prietor hath often the choice of sire and dam, and if they be healthy and sound there will be every reason to believe the offspring will be the same; yet it is found that more black cattle do or would die while under the denomination of calves, than at any other period. This is universally admitted as a fact, and must originate from some cause.*

If we suppose Providence has entailed upon infancy a greater share of ills than upon any other stage of existence, we may widely err, notwithstanding the havock which is made among every species of domestic animals at an early age. Rather let us believe that the all-wise disposer of things has bestowed upon man such a measure of rational faculties as will easily enable him to attain a knowledge of his duty to that part of the animal creation which he has captivated and made subservient to his interests and pleasure; and that the want of a necessary knowledge of this useful animal is entirely owing to the negligence of proper application so requisite to this simple but useful study.

Record bears witness, through past ages, what progress the mind of man has made in many sciences, much more abstruse than the simple care and attention due from man to animals, who are his immediate servants, and absolutely demand his care, and who are capable, by his kind offices, of rendering him the most important and real services, when necessity may urge, or superfluity become tasteless and insipid.

(To be continued.)

Art. XL.—*On Draining—Addressed to a Young Farmer.*

[FROM THE FARMER'S REGISTER.]

There is no one branch of practical farming which is more generally misunderstood or neglected in Virginia, than draining. The dryness of our climate, and the small proportion of our soils that are both level and of a retentive nature, cause this evil to be limited in its injurious effects, and to attract but little notice, compared to other defects in our husbandry. It may, and probably is the case, that many of our good farmers understand correctly the principles of draining wet lands, and execute the different requisite processes in an efficient and economical manner. But

* This is not the case in the west.—*Ed.*

such cases are very rare in comparison to the many who are deficient both in theory and practice. It therefore seems to me, though not claiming to possess much knowledge on this subject, that even my imperfect views and experience may be serviceable to young farmers, and bad farmers—and let it be understood that my observations are designed for no others. Good farmers are requested to pass over the pages of the *Farmer's Register*, which my desultory remarks may occupy, and to pardon the writer for so occupying them to their loss. Another apology may be due to my readers, for the unpolished form and manner of my writing: if so, I will make it now, and then be done with apologizing. In the first place, I have barely time to write even hastily and carelessly; secondly, my matter will not be of a kind to deserve much labour in embellishing; and lastly, perhaps with all the pains and care I could bestow, I should not make it appear much better.

Drains or ditches are required for three different purposes, as follows: 1st. For collecting and discharging surplus rain water on land which is generally dry. 2d. For conveying streams. 3d. For collecting springs oozing from the hills, and diverting their course from the land below.

Ditches of the first kind, of which I shall now speak, are the easiest to make and keep in order, and are generally either omitted altogether, or made at double expense, to serve but half their purposes. A drain is required wherever there is a narrow depression of the surface of any land nearly level, in which the water of heavy rains collects and remains until it slowly passes off at the lower extremity, or soaks into the earth. Unless the loss of crop from such a cause is almost certain, and the space of an extent too great to lose, it is generally left to take its chance for a dry season, or gentle rains—by favour of which, the sink may sometimes remain dry enough through the summer. But usually, from excessive wetness, it costs double labour to till, and produces either a scanty crop, or none. When a ditch cannot be dispensed with, it is commonly cut by the spade through the middle of the sink to its outlet, and the earth thrown on one or both sides of the ditch, in little separate hillocks, to let the water pass between them into the ditch. Every cleaning out of the ditch helps to convert these separate hillocks into a continued banks on both sides—and that end is still faster reached by the soil being turned towards the ditch by every ploughing, as horses do not (and cannot safely) cross such ditches with the plough. The trouble of stopping and turning the ploughs on reaching the ditch, and the margin thus lost or damaged on each side, amount to a serious disadvantage, even while the ditch serves properly as a drain to the adjacent ground: but in a few years that good is nearly or quite forfeited, by the margins

of the ditch being so raised as to bank out the water, unless other means are used to prevent.

Nearly all the trouble and loss caused by this slovenly mode of ditching, may be avoided by using the *plough* in a proper manner to make and repair such drains. Mark off the middle of the sink, through its whole length, and with whatever crook its course may have. Then plough a "land," the sides of which shall be parallel to and equidistant from the middle of the sink, and of course on that line will fall the water furrow made by the finishing of the plouging. The width of the "land" so ploughed may be from 10 to 30 yards wide as a shallow or deeper drain is wanting—and very often, a single deep ploughing, with a careful running of the last furrows, will serve to drain the sink as effectually as a new ditch cut by the spade. In this case, the work cost almost nothing—as the ploughing should be given when the field is in the course of being broken up for a crop. If the mode of cultivation is in ridges crossing this drain, an additional ploughing of the same land should be given immediately, which will doubly deepen the water furrow for the drain. But if the field is kept under flat cultivation, or in wide beds, that additional ploughing will scarcely be needed, as the drain may be easily and conveniently kept open, by ploughing out a similar "land" wherever the field is broken up. Whatever may be the mode of cultivation, the ploughs will cross this drain without the least difficulty, and there will be no land lost to cultivation. The ditch will scarcely be observed (being merely a water furrow,) but in fact, the land on each side after a few years, slopes gently towards it for 10 yards perhaps, so that it is actually a drain of 20 yards width. The earth carried it into the furrow by ploughs running across will scarcely fill it too much in the tillage of a crop of corn: but if necessary, the earth so carried in, is easily thrown out by shovels, and may be scattered over the widely sloped margins, without fear of raising a bank.

The poor level ridge lands, below the falls of our rivers, are full of shallow basins, which though often dry in summer, are ponds of rain water all the winter and spring. These ponds are usually in a line along a wide shallow depression, descending towards one of its extremities. As the wetness of the earth, and the roots of trees (when the land is first cleared,) would forbid the effectual use of the plough in such places, a narrow ditch must be cut with spades, and brought from the lower outlet, through the middle of the line of ponds, so as to draw off the standing water. But as soon as the land is fit to receive good ploughing, (which will be by the beginning of the next course of crops,) a broad land as directed before should be marked off, taking the ditch as its middle, and ploughed out. The closing furrows will be probably as low as the bottom of the old ditch, and sweep away all appearance of it, and leave it passible by ploughs

and carts, though more serviceable than when it was a barrier to the passage of both. In short, in all situations of this kind, the plough seems to efface the ditches, while it renders them the most efficient. The superiority of these drains, in cheapness and efficiency, to those cut in the best manner by the spade, may be easily conceived, by supposing a piece of flat and wet soil to be thrown into wide and high beds with clean deep water furrows, in the usual manner, by the plough—and compared with similar lands ploughed level, and then divided into beds by narrow trenches being dug between with spades. Every piece of well bedded flat land has in every water furrow such a drain as I have recommended.

In bedded level land, there will be many slight depressions, which even when so shallow as to be scarcely perceptible, will hold water after heavy rains, and destroy the growth of winter crops. If the beds prevent the opening of drains across entirely by the plough, at least it may commence and forward the spade work for these places. These *grips* (as such temporary drains are called) should be opened only a little deeper than the water furrows which cross them, as soon as the field is sowed in wheat. They may be quite effectual as drains, without being wide or deep enough to obstruct the future ploughing of the field.

The next kind of ditches are carriers of steams, and serve to drain the adjacent land by sinking the level of the stream in ordinary times, and more or less preventing its overflowing its margins, when swollen by rains. These ditches are required in almost every alluvial bottom, formed by, and subject to the inundations of streams passing through: unless the body of water is too great to be manageable by such means.

The streams in lower Virginia may be divided into two kinds: 1st. Such as have so little fall in their course, as to form *swamps*, by overflowing, or at least saturating with water all the low-grounds during the winter and wet seasons, and thus making the land a worthless quagmire at all times. 2d. Such as have enough fall to leave the low-ground firm and even dry, in ordinary times, except where injured by springs, or other water than that conveyed by the main stream.

The first class of streams are much the most important, on account of the many extensive bodies of swamp land which remain not only worthless, but nuisances in several respects, and particularly as nurseries of disease; though no lands are richer, or could be brought into profitable use and cultivation, so easily and cheaply, compared to the great gain that would be obtained. Still, it will be unnecessary for me to treat on this branch of draining at length. In this point only, there is nothing to object to as faulty in the practice of individuals—for our laws (indirectly but effectually) forbid all such extensive drainings—and thus, our government shows a degree of negligence or stu-

pidity—(it deserves no milder name—) which surpasses all of which evidence can be found in individual operations. When our country was first settled, it seems probable that these swamps were comparatively dry, and the streams unobstructed, except by the dams constructed by beavers. But every operation of our *civilized* population has served still more to raise, obstruct, and stagnate the waters. The only profit yet drawn from the swamps, has been by getting lumber from the large cypresses and other timber trees. In cutting down these trees, their tops are very often thrown into the course of the stream, where each serves to catch all the leaves and other floating rubbish, until it forms a dam, and raises, and often diverts the stream, to a new bed. The current is at no time sufficiently strong to remove such obstructions, although it may be spread over a flat of half a mile in width—and every one remains, until covered over with a deposite of mud. The law permits any land owner to add to these obstructions at his will—but (in effect) refuses the right to use the only means for bringing into profitable culture these great tracts of rich land, and of restoring health to the neighbouring farms, which they now infect with bilious diseases.

Notwithstanding the great extent of overflowering waters on these flat swamps, the supply is much smaller than it appears, and they could be removed and kept within safe bounds by opening a canal from the outlet below, through the whole course of the swamp, as straight as the form and inclination of the land would permit. Level as such swamps are, there is plenty of fall for this purpose—and a ditch of 10 or 12 feet wide and 3 or 4 deep, would drain away the water which as now obstructed, inundates many thousands of acres. The expense of this central main carrier would be very inconsiderable, divided among all the owners of a large swamp; and when finished, nothing more would be wanting to make the land dry, except the small side drains to intercept the springs coming out of the highland, which each proprietor would dig for himself. The central canal being so nearly level might possibly be made also serviceable for winter navigation, by having temporary flood-gates.

But cheap and profitable as such drainings would be, they are rendered impossible under our existing laws, because the concurrence of every individual owner of the swamp is necessary for the execution of the work. Blackwater Swamp (for example) is more than sixty miles long, including all its branches, and perhaps belongs to more than thrice as many individuals—and it is manifest, that from such a number, no such concurrence can possibly be expected, even if there were among them no minors, or life estate holders, neither of whom can legally concur. If by possibility, only a single proprietor opposed the scheme, while all the others were in favour of it, he alone might

obstruct the execution. Nor is there any remedy to be soon expected. If three out of every four of the proprietors of any of these swamps were to be awakened to the importance and profit of such a general plan of drainage, (and I am sorry to confess that such is far from being the case,) and were to petition the Assembly for powers to make it, and to compel all to bear their share of the cost, the proposition would excite violent objections, and perhaps intolerant and unappeasable enmity to the scheme. Every small lawyer, in and out of the legislature, would be furnished with a most convenient theme. We should hear the plan denounced as an invasion of the "sacred rights of property," and the denunciation maintained by so many arguments (or what would pass for arguments) that the advocates would be glad to retreat from the wordy inundation. But as plausible as such arguments may be, precisely such might be urged against opening the existing, or any roads, through private property, if we can suppose such a case possible as the country being settled and cultivated, without having a public road within its limits. Roads are cut through private property without asking leave of the owner, and he is also taxed according to his property, to pay his share of the expense of construction. Sometimes it happens that the road for which a proprietor is so taxed in his landed rights, and on his purse, though beneficial to the public, is to him individually a source of inconvenience and of loss. Still these exceptions are properly considered as no objection to the general regulation, for the general good—and the lawyers raise no objections, because the policy is already sanctioned by *law*. But if all but lower Virginia had been one great swamp, held by thousands of individual proprietors, and which could be drained as easily as Chichahominy and Blackwater swamps now could be—according to our laws and to the arguments of lawyers, there would be no possible means, consistent with justice and the principles of our legal policy, by which this beneficial improvement could be effected.

But I have already said too much upon a branch of draining which was only intended at first to be named as matter to be omitted. My purpose was to advise practical operations which each individual may perform—and I have allowed myself to digress (uselessly I fear,) upon what individual efforts are altogether forbidden.

(*To be continued.*)

ART. XLI.—*Cultivation of Peach Trees; by* R. H. B.

[FROM THE NEW-YORK FARMER.]

Peach trees may be preserved, by good management, twenty, and probably forty or fifty years. They are destroyed from north latitude forty to thirty-six degrees, by a worm which feeds on the inner bark of the tree, at its root. This worm is said to be the offspring of a fly of the wasp kind, which deposits its eggs in the bark of the root of the tree while it is young and tender. The remedy consists in searching for the openings in the bark at the root, and taking them out. If this operation is repeated three or four springs, the worm never after can make a lodgement there. The bark of the tree by this time becomes so hard, that the fly cannot make the puncture, in order to deposit the egg, or if deposited it perishes. After the worm is cut out in the spring, draw the earth up around the body six or eight inches above the other ground.

Of all the fruit trees produced in this climate, none bears pruning so freely as the peach; indeed, it should be treated very much as the vine is. All those branches which have borne fruit should be cut out, if there is young wood to supply their places. Proof—take a limb which has borne two or three crops of fruit, and notice its produce; take another on the same tree, which has never borne at all, and the fruit on this last will be twice the size of the former, fairer, and less liable to rot. In pruning, the branches should be taken or cut out of the middle of the tree: thus giving more air and sun to the fruit on the outer limbs.

The peach tree produces best fruit when the ground is not stirred about it while the fruit is on. When it has no fruit, it should be cultivated as carefully as a cabbage, or any other plant.

The above comprises the most important points in the rearing of peach trees, and good fruit; if attended to, I have never known them to fail,—and my experience has not been very limited.

I repeat what may, perhaps, be doubted, that the peach tree, if the worm is kept out of the root, will live, at least, twenty years; and that this may certainly be done by attacking them the first year of its growth, and continuing to extract them for three or four years in succession, not forgetting to draw the earth up as directed. Straw, chips, or trash of any kind, serve the purpose just as well.

Very respectfully, yours, &c. R. H. B.

Washington City, Nov. 26, 1833.

Art. XLII.—*Posts.*

[FROM THE KENNEBECK FARMER.]

There have been some remarks published in the *Genesee Farmer* upon the subject of setting posts butt end up, in order to ensure more durability. We were last summer informed by Mr. North, of Augusta, that he set, several years ago, two posts near the river at the landing in Augusta, not far from the Kennebeck Hotel. One of the posts was set butt end up, the other was set the but end down. He states that both were equally sound when placed in the ground, but that the one which was set butt end up is now sound and good, and that the other is decayed.

His mode for accounting for the difference in preservation is the following, viz. that the tubes in the wood through which the sap ascends while growing, are furnished with valves or separations to prevent the weight of the sap from pressing back. That if the post be set in the ground with the small end up the moisture would rise in the same manner that the sap did, and thus hasten a decomposition of the wood, but if set in the other position the valves or partitions would prevent the moisture from rising at all. This theory is plausible, but whether true or not we cannot say, or whether setting a post with the small end downwards will cause it to last longer than otherwise we cannot say from any experience that we have yet had ourselves. One method, however, is certain, viz. charring as mentioned by Carolus. And we have also found that by heating the whole of the post even if it be not charred it will increase its durability.

There seems to be a sort of low state of vegetable life remaining in wood even after it has been cut for some length of time; and the action of this vitality does seem, in a manner inexplicable to us, to produce decay. The shipwrights in the English navy-yard have become aware of this sort of morbid life, if we may so speak, and they have adopted the plan of soaking their ship timber in a weak solution of corrosive sublimate, in order to destroy this kind of action and preventing what is called the dry rot in timber. We have lately received the February number of the *Mechanic's Magazine*, in which we find some remarks on the subject of preventing the decay of timber by saturating it with lime.

PART III.

MISCELLANEOUS INTELLIGENCE.

A valuable Cow.—A cow of the Yorkshire or short-horned breed, the property of Mr. Tindall, near Ripon, from the age of two years to fourteen, brought forth twenty living calves. The quantity of excellent milk she gave was not less extraordinary, her daily supply being thirty-two quarts, imperial measure, and often a pint over. She was fed on the usual summer pasture.—*N. Y. Far.*

Loss of Grain by Winds.—In 1812, the wind throughout Scotland shook out about 18 bushels of grain per acre. Those farmers in the United States who allow their grain to become too ripe must lose a considerable portion by wind, and by numerous handling. *Fifty-six millions of bushels* of grain are supposed thus to be lost annually in Great-Britain.—*Ibid.*

Shrivelling of Grain.—Wheat, when cut green, shrivels more than barley, and the latter more than oats. Oats will retain their plumpness when cut quite green.—*Ibid.*

Wheat.—Mr. Harper—Shortly before last harvest, you published a suggestion in your paper, "that wheat cut ten days or two weeks earlier than usual—that is, before it became entirely ripe, yielded better and made superior flour." In consequence of that statement I had the experiment tried to a small extent. I had a small part of a field cut about ten days sooner than the residue—it was kept separate, and when recently brought to the mill with the wheat cut from the same field at the usual time, the early cut wheat weighed two pounds to the bushel heavier than the other. The flour made from it (there was ten bushels) is remarkably fine, equal to any I ever had in my family, and superior to any I have had this year from any other wheat. I think it proper to make these facts known, although I would not say that a single experiment like this ought to establish a general rule. T. G. M'Culluch.

January 20th, 1834.—*Frank. Rep.*

Potatoes.—Try it—Those who are fond of baked or roasted potatoes, will be gratified by trying the following method:

Place them clean in the bottom of a bake-pan or kettle, dispensing with the cover—hang them over the fire and shovel the coals on to them. It will be as quick and as cheap as any other method of cooking them; and they are not so soggy as when baked under the cover, nor burnt as they commonly are when roasted on the hearth—and the flavour will be excellent.—*Maine Far.*

Cure for a Film in the Eye of a Horse or an Ox.—Edward S. Jarvis, Esq. of Surry, (Me.) in a letter to Mr. Joseph R. Newell, proprietor of the Boston Agricultural Warehouse, states as follows:

Have you ever heard of a cure for a film on the eye of a horse or an ox? I was told of one eighteen or twenty years ago, and have been in the practice

of it ever since with perfect success. It was brought to my mind by just having had proof of its successful application in a calf that had its eye hurt by a blow from another creature. A film formed over it, and it was thought its eye was lost. But by turning into the opposite ear, a great spoonful of melted hog's fat, it was cured in 24 hours. I do not pretend to account for this, but I have seen it tried with success so often, that I think it ought to be made public, if it has not been before. I learned it of an Indian.—*N. E. Far.*

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Preserving Butter.—The farmers in the parish of Udney, in the county of Aberdeen, practice the following method of curing their butter, which gives it a great superiority above that of our neighbours:

Take two parts of the best common salt, one part of sugar, and one part of saltpetre; beat them up together, and blend the whole completely; take one ounce of this composition for sixteen ounces of butter, work it well into the mass, and close it up for use.

The butter cured with this mixture appears of a rich marrowy consistence, and fine colour, and never acquires a brittle hardness, nor tastes salt; Dr. Anderson says, "I have eat butter cured with the above composition, that has been kept three years, and it was as sweet as the first." But it must be noted that butter thus cured, requires to stand three weeks or a month, before it is begun to be used: if it be sooner opened, the salts are not sufficiently blended with it; and sometimes the coolness of the nitre will then be perceived; which totally disappears afterwards."

The above is worthy the attention of every dairy woman.—*Gen. Far.*

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Dale's Hybrid Turnip—Splendid Crop.—We have repeatedly called attention to Dale's Hybrid, a turnip which combines in a great degree the qualities of the globe and ruta baga, and are glad to learn that its culture is gradually extending. In proof of this, we make the following quotation from a letter just received from Sanquhar:—"A gentleman in this neighbourhood has a crop of Dale's Hybrid, which, from the experiments already made, will yield a return of not less than twenty-five tons per acre. Nothing equaling or approaching to this has been known in this country The bulbs are at once large and solid; and two of them have been sent to Messrs. P. Lawton & Son, to be shown as an agricultural curiosity."—*Dumfries (Scotland) Courier.*

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Laying Plants.—Mr. Munro, in Loudon's Magazine, recommends splitting the layer for some distance, instead of the common method of notching or tonguing them. They are not as likely to break, and send out fibrous roots sooner. A piece of clay or moss is put in the slit to keep it apart.

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Highly Important.—Dr. Buisson is said to have discovered an infallible remedy for hydrophobia, which he has communicated to the Academie des Sciences, in Paris. He had no expectation of recovery, and went into a vapour bath heated to 42 degrees Reaumur (126 Fahrenheit,) as the easiest mode of suffocation. To his astonishment, the whole symptoms vanished at once, and he has never since had the slightest recurrence of this dreadful disease. By the same means he has cured upwards of eighty patients, and he intends to try its efficacy in cases of cholera, plague, yellow fever and gout.

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Painting of Buildings, &c.—For painting the roofs of buildings, Mr. Patterson, of New-Jersey, has, some years since, given the following directions, which have been highly approved, as the best composition known for preserving the roofs of houses; as it is found, that it hardens by time, and is an effectual preventive against the roof taking fire from the sparks of the chimney.

"Take three parts of air slacked lime, two of wood ashes, and one of fine sand; sift these through a fine sieve, and add as much linseed soil as will bring it to a consistence for working it with a painter's brush. Great care must be taken to mix it perfectly."

We believe grinding it as a paint would be an improvement. Two coats are necessary; the first rather thin; the second as thick as can be conveniently worked.

Painting of wooden buildings, of every kind, is not ornamental, but the owner is well repaid for this extra expense, by the greater durability which the paint gives to them, the wooden fences also, which are intended to be ornamental, round, and near buildings, should never be destitute of a good coat of paint — *Farmer's Assistant.*

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Cholera in a new form.—The Black Tongue disease in horses is becoming so prevalent, and spreading with such rapidity, that we are almost induced to believe it is a species of Cholera. It is infecting horses, cows, oxen, sheep, and even the feathered tribe; and, what is more strange, a man near Deerfield, who has been among horses suffering with it, has contracted the disorder! It is a species of putrid Sore Throat, or Canker Rash, eating off the roots of the tongue and turning it black, and at the same time diseasing the glands of the throat. Cleanliness of racks and mangers should be preserved, and as a preventative, salt is said to be excellent. A piece of gum assafœtida placed in each manger, and another fastened in the water bucket, are indispensable to the health of animals about these times. Another preventative used in large stables in this town, is putting a composition of tar and camphor on a piece of cloth and wind it round the bits. Fine salt thrown into the mouth and sulphur scattered in the manger occasionally. One of our extensive stage proprietors informs us he has twelve horses diseased with the black tongue, and six with a similar disease in the foot, which occasions it to rot off.—*Northampton (Mass.) Courier.*

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Rheumatism.—In our last paper we published a receipt for the rheumatism, which was simply this: "Take a strip of gum elastic, and tie it round the joints affected." This would not endanger life, and was well worthy the experiment. So we say. It was tried upon a gentleman of this place, who had resorted to almost every other remedy, and to his surprise had the desired effect. In fact he was so much reduced by this disease as to lose the use of his limbs, and in making the experiment he has not only been relieved of the pain and weakness so incident to its nature, but is finally gaining and enjoying nearly the wonted strength of his system. We recommend the remedy. —*Lebanon Gaz.*

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A method of extracting the juice of the Sugar Maple, for the making of Sugar, without injuring the tree.—It has been customary to cut a gash in the tree, from which the saccharine liquor flows, or to bore a hole, and put in a reed, and, when the liquor ceases to flow, plugging up the hole. Both these methods are injurious, and tend to destroy the tree. In the latter case, the tree rots round the plug to some distance within. The following method is proposed in lieu of these, and has been successfully practised in Kentucky. At the proper season for the running of the liquor, open the ground, and select a tender root, about the size of one or two fingers; cut off the end, and raise the root sufficiently out of the ground to turn the cut end into the receiver. It will emit the liquor from the wound as freely as by either of the other methods. When it ceases to flow, bury the roots again, and the tree will not be hurt.—*Mackenzie.*

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Chemistry in the Kitchen.—Why is it necessary to mix lime with ashes, which we are about to leach to obtain ley to make soap? The correct answer to this question will explain the reason why our good housewives do not always succeed in making good soap, and will suggest a remedy for the evil. Common soap is compound chemically united of potash or alkali, and grease, fat or tallow. The alkali is naturally combined with carbonic acid, for which it has a stronger affinity than it has for grease; hence while it continues united

with the acid, it will not unite with the grease, and produce good soap. But lime having a stronger affinity for the acid than the alkali has, extracts it from the ley, and the alkali then readily unites with the grease and forms soap. From this it will be seen, that the lime should be fresh burnt, and spread over the bottom of the leach tub, so that the ley all filters through.—*Gen. Far.*

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Stains of Fruit.—Stains by fruits are readily removed from clothes by wetting them, and placing them near lighted brimstone; a few matches will answer the purpose.

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Lambs.—Many farmers suffer much from the loss of lambs. It is found, in England, that balls of wool are formed in the stomach, obtained from the ewe. The wool around the udder should be cut off.—*N. Y. Far.*

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Fowls.—The advice in the following paragraph is very little heeded by American farmers:

The breeders of fowls are well aware of the impropriety of saving a male and female from the same sitting of eggs, if they are to be kept for breeding. —*N. Y. Far.*

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A Bat Usefully Employed.—It was no idle speculation, when we proposed to introduce bats into kitchens to devour the flies. A friend of ours has since most successfully availed himself of the hint. The windows of the common sitting room being open, and a candle dimly burning, a bat entered; and passing into the entry, the door was immediately closed after him, which left him in the dark. A candle was then placed in the cellar kitchen, so as faintly to illuminate the stair-case, and in less than two minutes the bat descended into that apartment. He was honoured with a light for about half an hour, during which time he was most actively engaged among the flies; and on visiting the kitchen very early in the morning, our informant found him wide awake, flying about the room. On opening the outer door he escaped, but *more than one half of the stock of flies had disappeared.* He will be well received in future, and invited in as often as opportunity occurs.—*Gen. Far.*

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Animal Life.—A hare will live ten years, a cat ten, a goat eight, an ox twenty, a swine twenty-five, a pigeon eight, a turtle dove twenty-five, a raven one hundred, an eagle one hundred, and a goose one hundred and fifty.—*Amer. Far.*

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New Mode of raising Wheat.—In the Maine Farmer, we find a committee of the Kennebec Agricultural Society holding the following language:

In this connexion, we will call your attention, for a moment, to a new mode of raising winter wheat, that is pursued successfully in the State of Vermont. The ground is prepared in autumn, and the manner already pointed out, and the seed is taken late in the season, when the cold weather has arrived; and after being swelled, is boxed up, placed where it will freeze, and thus kept till spring, when, as soon as the ground will permit, it is sowed. The danger of winter killing is thus avoided, and we are told the crops of wheat are nearly doubled in the section where this course is pursued. The experiment is at any rate worth trying, and if it should prove successful, it may be the means of enabling us to increase very materially the amount of our crop.

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Cutting Timber.—Much contrariety of opinion has frequently been expressed on the proper time for cutting timber. There are unquestionably, numerous circumstances to be taken into consideration. When the object is to obtain vigorous sprouts, the trees should be cut when the leaves are off, and probably late in winter, or early in spring. When durability of the timber is the object, during the inactivity of vegetation, and very probably after two or more regular seasons in succession, when the wood was well ripened; and when it is desired to prevent the sprouts from growing, when vegetation is active, and late rather than early.—*N. Y. Farmer.*